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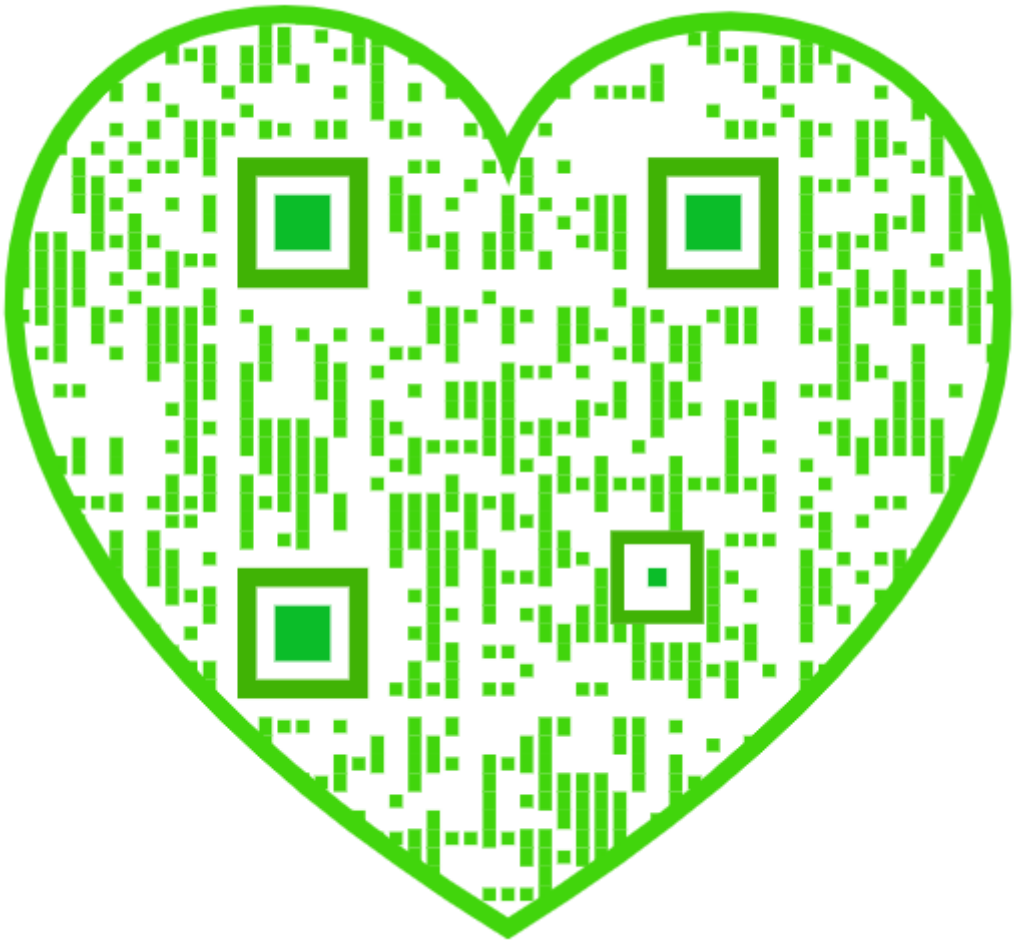

EQUIPMENT FOR TEACHING HOME MAKING IN TEXAS HIGH SCHOOLS

222-344

ANNIE WEBB BLANTON
Superintendent of Public Instruction

JESSIE W. HARRIS
LILLIAN PEEK
Directors of Home Economics Education

BULLETIN 140 JANUARY, 1922

STATE BOARD FOR VOCATIONAL EDUCATION
AUSTIN, TEXAS

Monograph

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PREFACE.

The author of this bulletin has for several years compiled helps for high schools that were equipping or improving their equipment for home making instruction. This material was assembled into bulletin form during the 1921 summer session of Columbia University, with the advice and help of Miss Anna M. Cooley.

Suggestions and helps for this bulletin have been offered from such numerous sources that it is impossible to acknowledge them separately. Suffice it to say that the author is grateful to all who knowingly or unknowingly have contributed ideas on home economics equipment.

The Federal Board for Vocational Education has been especially generous in permitting the use of parts of the text and several illustrations from their bulletin on Plant and Equipment for Vocational Classes in Home Economics.

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EQUIPMENT FOR TEACHING HOME MAKING IN TEXAS HIGH SCHOOLS

BY

JESSIE W. HARRIS,

State Director Home Economics Education.

INTRODUCTION

How shall we equip our high school building for teaching home making? Does our equipment for teaching home making meet the approval of the State Department of Education? Such questions have come to the desk of the State Supervisor of Home Economics frequently the past year. This bulletin is offered in answer to such questions with the hope that it will be of some help to the following persons: architects of Texas school buildings, Texas school boards and superintendents, and teachers and teacher-training classes in Texas.

There is a broad gap often between what is desirable and what is within the reach of the schools. This bulletin does not propose to set up ideals in home making equipment, but it is intended as practical suggestions for Texas schools, taking into account present school buildings and school building conditions in the State.

From one standpoint the present is an inopportune time to discuss equipment for home making because such equipment should be determined by the home making instruction to be offered by the school. At present the course of instruction is broadening to include a wider range of home making activities, but one cannot say with finality of what the course should consist. Certainly we do not all agree as yet on what constitutes a course in home making. This is due to the changing character and wide variety of home making activities. A few years ago one might have stated, with no small degree of satisfaction, just what the home making equipment of a high school should be—provision for cooking and sewing. Now we are sure that the home making course must contain other units such as child care, art applied to the home, personal hygiene and home care of the sick, and others.

Perhaps from this point of view it would be better to omit any discussion of home making equipment for ten years or more, until the units to be taught are more definitely determined and a more definite basis thereby afforded for evaluating equipment requirements. Before such a time arrives (if ever) many school buildings will be built in Texas, thereby increasing the number of home making departments in the high schools of Texas. At present most of the equipment in Texas high schools admits improvement. By this is not meant more expensive equipment, but equipment better adapted to the instruction being given. The suggestions offered in this bulletin may be far from ideal, but they are a decided improvement over what now constitutes home making equipment in the Texas high schools. It is hoped that the suggestions will prove practical for new high school buildings, for a department of home making separately housed, and for remodeling old rooms.

The State Department of Education will be glad to give more specific suggestions upon request.

Superintendents and school boards are invited to send blue prints of their proposed home making departments for suggestions and help.

THE GROUP OF ROOMS

I. The Present Situation in Texas

It is a wonder that we in Texas have been contented as long as we have with our present type of equipment for home making instruction in our schools. Almost without exception, it is bad. For one reason or another, basement rooms are used, floors are concrete, floor space is poorly planned, little thought or effort has been expended to make the equipment for home making at school as efficient as good equipment for home making in the homes of the community. It is generally a room or rooms like any other classroom, with no closets or storerooms and with desks as nearly like school desks and as unlike home equipment as it is possible to make them. This very unlikeness of home equipment and school equipment is undoubtedly one reason why the home economics work in our high schools has not insured independent home workers. What could be more perplexing to the girl trained in the laboratory, not uncommon, with small desks containing a cupboard too small to hold even a dishpan; a hot plate and a tiny portable oven of no practical use; toy sized utensils; and supplies proportioned in quantities, as, ¼ egg, ⅛ teaspoon baking powder, 3/16 cup flour, etc., than the family kitchen with its conveniences or inconveniences, its large utensils, real stove (perhaps even a different fuel), and family quantities of foods, to say nothing of the fact that a whole meal is to be prepared at the same time by one person.

The pages that follow make suggestions for modifying the formal laboratory equipment so that the school equipment in its essentials is more like home equipment—furthermore, an increase in the usual floor space is asked in order to more nearly include in the school program all home activities.

What the Texas course of study will contain in five years no one can say. This year it will contain largely courses similar to those outlined in Bulletin 114, which is the basis for accredited work in home economics. No restraint is placed upon the school that progresses beyond this syllabus, but no school can afford to fall short of it. There are units outlined in meal planning, cookery and table service; textiles and clothing; applied design; physiology, sanitation, and personal hygiene; home nursing; household management; dietetics. If equipment is provided for these courses it will permit elasticity in the course of study. For example, a unit in child care, which should be included, would not require a new laboratory.

II. Location of the Home Making Department

The home making department must be *above* the *ground*. Whether it is on the top floor or an intermediate floor is of small importance, compared with the fact that it must *not* be in the basement or substory. Good light and good ventilation are essential. The *floor* of the home making instruction rooms should be above the ground level. Some architects have a way of assuring school boards that a basement is not a basement but a sub-story, a first floor, or some other camouflage name. Call it what you will, a basement has the following objections for home making laboratories:

1. The lighting is inadequate. In many basement laboratories on cloudy days artificial light is resorted to in the home making laboratories when no other classroom needs it. It is impossible to light storerooms.

2. Except in expensively constructed buildings, the rooms are damp. In Texas, at the prices paid for school buildings, dry basements in rainy weather are a myth.

3. Ventilation is inadequate, especially in the kitchen.

4. It is extremely difficult to keep basement rooms free from insects and mice.

5. The value of the subject is typified to the child by the dignity of its equipment and the desirability of its location.

6. Basements are usually inferior to the rest of the building.

7. Texas basements are often poorly kept.

8. Toilets are usually located in the basement. It is not desirable to have the home making laboratories near the toilets.

9. All teachers of home making, both in Texas and in other states, are agreed that the basement is not the place for home making laboratories.

10. The most important reason is that American standards of home making cannot be set and maintained in basement rooms. No one would entertain a suggestion that the kitchen, dining room, and sewing room of a residence be placed in an excavation, even though assured that it would be dry, that the windows would be full length, that the cost would be less, that it would be convenient for trades people delivering groceries (arguments given for basement laboratories).

11. Basement rooms are essentially dirty and hard to keep clean. When it is a little windy, the windows cannot be opened because the dust and dirt will be whipped against the building and into the ground floor rooms. After every rain the windows will need washing.

12. Cooking odors from the kitchen will permeate the entire building if the kitchen is in the basement.

NOTE.—It is interesting to note that in the East and North where basements have been the rule, many progressive school architects who have really studied the problem, have concluded that the basement is waste space and therefore costly. They are solving the trouble by putting the heating unit outside the building in a small structure, building the first floor on ground level and devoting it principally to the school auditorium or gymnasium.

III. NUMBER OF ROOMS

It would seem better to describe the number of equipment units necessary, rather than the number of rooms, for the number of rooms may vary from one large room with all instructional units in one room, to a separate room for each unit. The number of rooms, therefore, depends on the local situation to a large extent. The purpose herein is to help the majority of the schools of Texas. This would assume a minimum of one teacher and a maximum of two teachers, devoting full time to home making teaching; classes of 16 to 20 girls; periods of 90 minutes five times per week.

It should be our purpose to have only those rooms that are necessary and will be put to good use. A house that combines all the essentials of a good house with the school laboratories is ideal in some respects, but at present is impracticable in most Texas schools. All departments are crowded, school bonds are difficult to sell, and it seems very selfish to demand for home making instruction all of the space and equipment which is desirable, especially since much of the equipment is in use for a limited period of time each year.

The number of rooms devoted to home making in different schools varies as much as does the number of rooms in a residence. Some schools have a house, others have the main features of a house included in an apartment in the school building. The average Texas high school devotes three rooms to home making work: a food laboratory, a clothing laboratory, and a small room for a dining room. It seems advisable to increase the floor space allotted to this department in order to add a storeroom to each laboratory, a bedroom for instruction in home nursing and in child care, and a toilet room or bathroom.

IV. Size of Rooms

For purposes of simplicity in this bulletin, it is assumed that the rooms are to accommodate classes of sixteen students. If twenty students are to be accommodated, the space must be correspondingly increased (24′x36′ approximate size). More than twenty students in a class cannot be effectively handled by one teacher.

Food Laboratory and Storeroom

For the food laboratory a space 24′x30′ is desirable.

For the storeroom a minimum space of 6′x8′ should be allowed. More is desirable. All storage space will not be in the storeroom. It is convenient and desirable to have cases and lockers in the food laboratory (see detailed floor plan of food laboratory).

Dining Room

A family sized dining room is desirable—14′x16′ is an average size.

Clothing Laboratory and Storeroom

For the clothing laboratory the same amount of space is needed for the same number of students that is needed for a food laboratory, 24′x30′. A storeroom approximately 6′x10′ is recommended.

Home Nursing and Child Care Laboratory

A room the size of a home bedroom is usable here. This is a size varying from 12′x14′ to 16′x18′; bathroom 6′x10′.

An architect in planning any school building adopts a certain sized room which he calls an average classroom. The usual sizes are 28′x36′, 24′x36′, or 20′x30′. In general, it may be said that the home making department should have allotted to it the floor space of three classrooms. This floor space may be divided in various ways.

V. Floor Plans

1. *General Considerations in Arranging Rooms for Home Making Instruction*

The first floor is convenient for delivery of supplies and removal of waste.

The top floor location of laboratories will avoid the distribution of odors from food through the rest of the building.

If the laboratories are placed on the top floor a dumb waiter may be provided.

By all means, provision should be made for the use, in the food laboratory, of the prevailing fuel of the community. In Texas this means a flue for coal, wood, or natural gas stoves.

It is desirable for the food laboratory to have windows on two sides to permit cross ventilation.

It is recommended that the glass area for laboratories be not less than one-fourth the floor area, and that windows extend to within six inches of the ceiling.

Electric service outlets should be planned for motors for sewing machines, ice cream freezers, and electric irons, also for demonstration of dishwashing machines, washing machines, vacuum cleaners, and other electric equipment.

All kitchen and serving space must be screened with full length screens. It is desirable to screen the entire department in order to permit free passage between the rooms. A further reason for screening the entire department is, that at night if the rooms are used for evening school classes, it will obviate the nuisance of bugs attracted by the lights.

Adequate and accessible artificial light should be provided in order to make the rooms usable for evening schools or school activities at night.

The wall finish in all rooms should be determined by the use and location of the rooms. It must be easily cleaned and it should be light colored.

Floors should be wooden, finished with three coats of good floor varnish. Hardwood is preferable. *Never oil the floors of the home making laboratories.* Texas is unfortunate in having concrete floors in many home making laboratories; a direct result of the idea that the basement is the place for home making laboratories. The concrete floor has nothing to recommend it, and has as much to condemn it as has the basement room. All schools having concrete floors for *any* room in the home making suite should put down wooden flooring. The least that can be done is to cover the floor with battleship linoleum. Concrete floors are not acceptable to the State Department of Education for home making laboratories.

Much built-in furniture should be planned as a means for convenience, economy of floor space, simplicity, and sanitation.

The home making department should be adjacent to the school lunch room if possible. At least it should communicate by means of dumb waiters.

Hot and cold water should be furnished, especially to the food laboratory.

Toilets should not be adjacent to the home making laboratories, or the lunch room.

Adequate blackboard and bulletin board space should be provided for all laboratories.

All cupboards, rooms, and storerooms must be *mouse proof*.

A clock in each laboratory is a convenience.

2. *Types of Floor Plans*

Two types of floor plans are given. One shows arrangement of rooms within the high school building; the other shows room arrangements where a separate structure is provided for home making instruction. The separate building is preferable from most standpoints in Texas. Most of our school buildings are too small. The result is that either inadequate or undesirable (basement) floor space is assigned for the home making department. The only way for many of our Texas schools to have first class home making departments is to desert the basement and build a cottage or bungalow. With sunshine, space, and air so plentiful, Texas does not need to teach her girls home making in basements.

3. *Advantages of the "Bungalow" Plan*

The architect finds difficulty in preserving a good architectural exterior if he provides adequately lighted and properly related all of the laboratories and storerooms needed by the department of home making. Often he cannot provide the windows necessary because he must consider the unity of the building from the exterior, or he cannot divide the floor space as best suits the department because the "room space" of the building does not coincide with the arrangement needed, or a flue is impossible in the kitchen for one reason or another.

In a house, cottage, or bungalow, not only can the physical aspects of a real home be included so that the girl has something she can imitate in her own home, but the home atmosphere is very much more nearly approached. The work will be more effective, and will carry over more readily into the girl's own home. All the rooms can be well lighted and arranged to best suit the work to be done in them.

It is not desirable to build too expensive a type of building for the "home making bungalow." The school of home making should not be too elegant for its standards to be aspired to by, and within the reach of, a large number of the homes of the community. In Texas these houses should, for the most part, be well built frame buildings. According to the law in Texas, a frame building cannot be built on a twenty-year bond. Since most school buildings are built on twenty-year bond issues, the tendency is to build the cottage of brick, making a cheap structure. Several such structures in Texas are an argument against cheap brick structures, for the walls crack and pull apart, and the building is an example of bad construction and bad sanitation, and is unsafe. School boards are urged to consider standards of construction in relation to cost of primary importance. If a brick bungalow is to be built, build one of good standards, not merely a cheap brick shell.

A further consideration in favor of the separate house is that it furnishes a much needed and easily available social center for the school and community.

A very satisfactory arrangement, and one which would meet a situation acute in many Texas towns, is a large house that includes the home making rooms and a teachers' home. One such is shown in the plans that follow. (Figure 13.)

A home making department is housed more economically in a well constructed separate house than in the more expensively constructed high school building.

4. School Building Floor Plans

It is expected that these plans will be taken only as suggestions. The purpose is to give room sizes and storeroom relations, leaving it to each architect to adapt the suggestions locally. The following plans show the home making department located in the high school building: (1) at the end of a building—figures 1, 2, 3; (2) the corner of a building—figure 4; (3) one side of an H-shaped building—figure 5; (4) separate sides of a hall—figures 6 and 7; (5) one side of a hall—figure 8; (6) one large room (not recommended if classes are larger than 12 girls)—figure 9; (7) floor plan for food work and housekeeping instruction in New York City school—figure 10.

The New York City plan, figure 10, is shown here through the courtesy of Miss Grace Schermerhorn, Supervisor of Domestic Science, New York City public schools.

The sewing laboratory connects with the foods laboratory but is not shown in the drawing. The following explanation of the use of the New York laboratories is quoted from a report through the courtesy of Miss Schermerhorn:

"The plan (figure 10) provides for the accommodation of a class of 36 girls, divided into three sections; two of these sections in the laboratory kitchen, the third section in the flat. These sections work in the following manner:

"Section 1. Individual work—learning to interpret and use recipe under the supervision of the teacher.

"Section 2. Divided into small groups in the unit kitchens, each group working independently with a family quantity of food, applying the lesson learned in the first section. The food prepared may be sold at cost to the school lunch room, to the teachers, or to the children themselves to take home.

"Section 3. Divided into small groups in the flat learning different household tasks such as making beds, sweeping and dusting, etc., and preparing and serving in a family meal the food they learned to prepare in Sections 1 and 2.

"Sections 1 and 2 alternate every lesson, having individual cooking one week and the cooking of a family quantity the next.

"The term is divided into thirds and the sections rotate so that each section has two-thirds of the term in the laboratory and the remaining third in the flat.

"Two teachers will be required for this type of domestic science rooms."

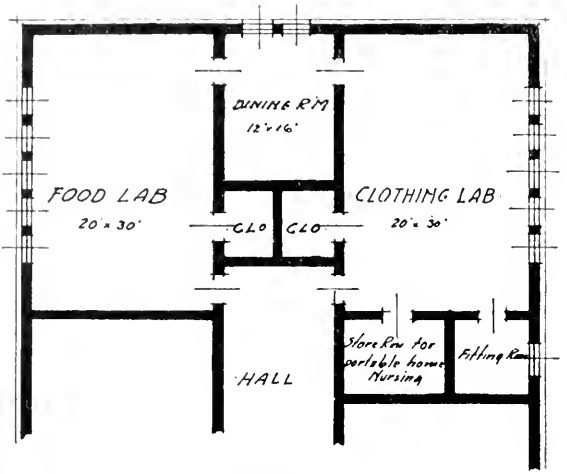
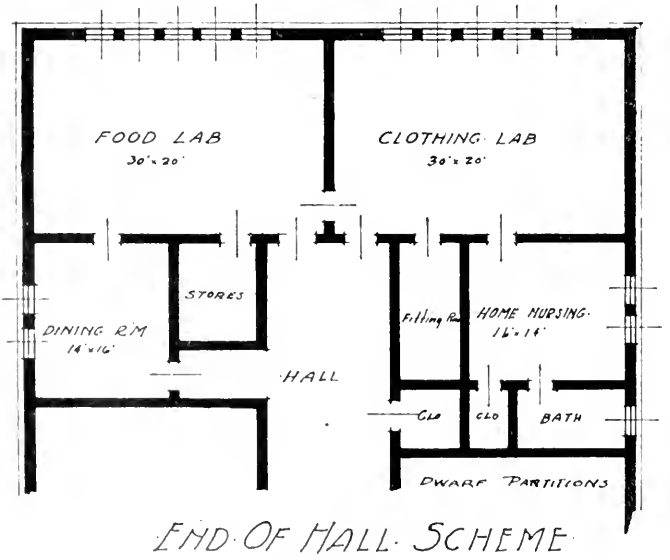


Figure 1.



END OF HALL SCHEME

Figure 2.

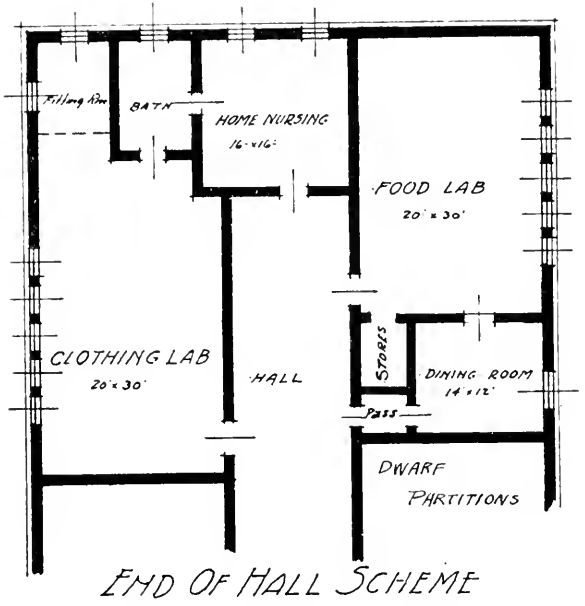


Figure 3.

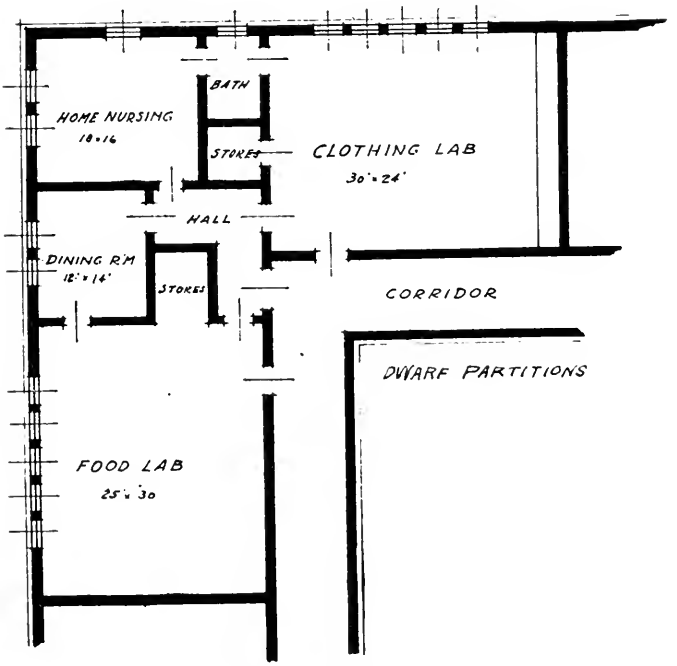
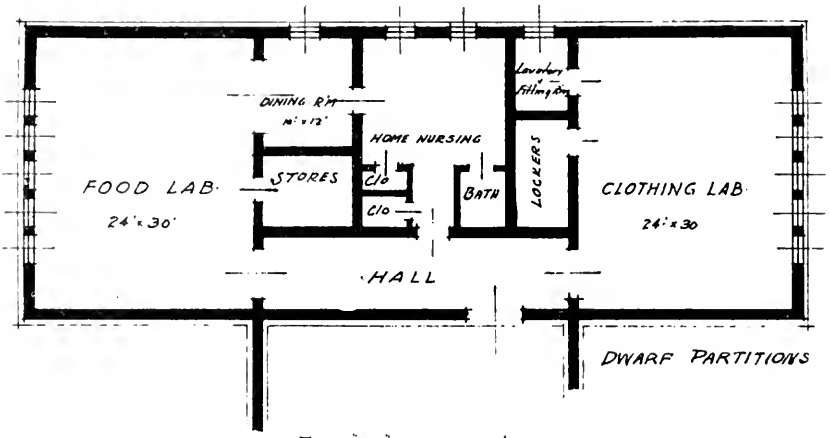
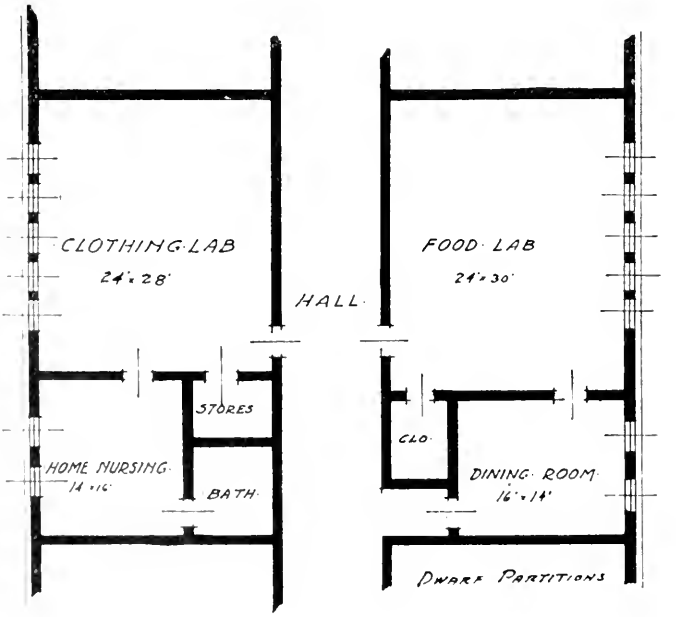


Figure 4. Corner of building.



FOR "H" TYPE BLDG.

Figure 5.



LABORATORIES DIVIDED BY HALLWAY

Figure 6.

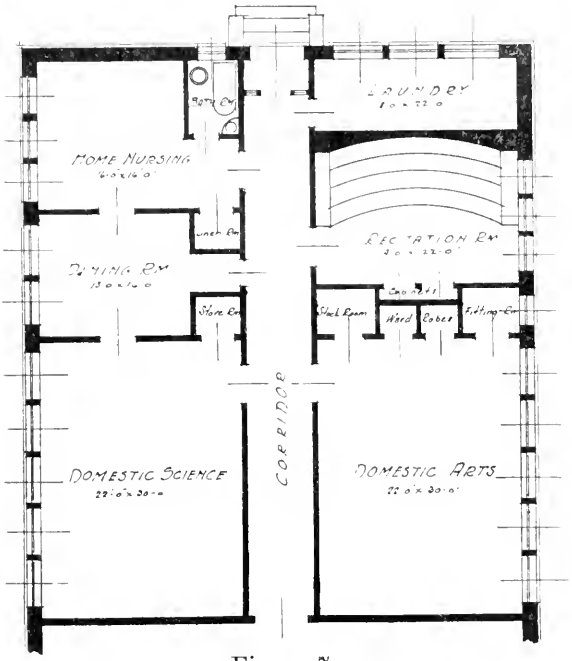
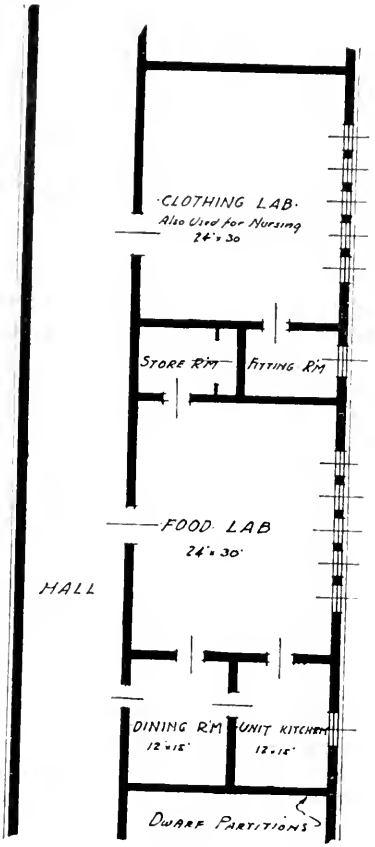


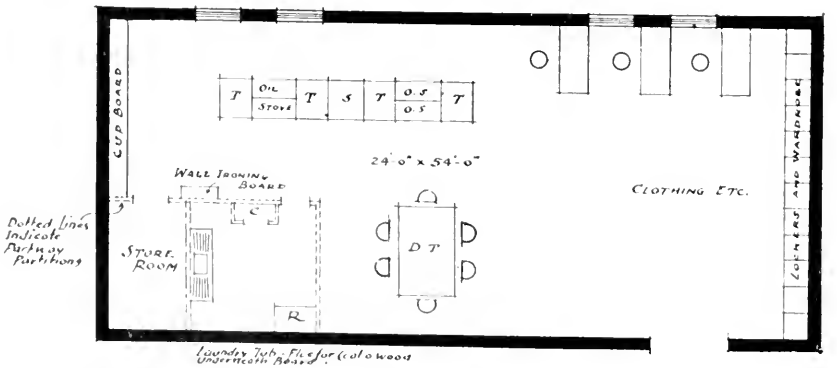
Figure 7.

Figure 13A. Exterior view of plan for teacherage and high school department of home making—See figure 13B.



ONE SIDE OF BLDG

Figure 8.



ONE ROOM FOR ALL — HOME MAKING INSTRUCTION
Recommended only when Classes do not exceed 12 Students

Figure 9.

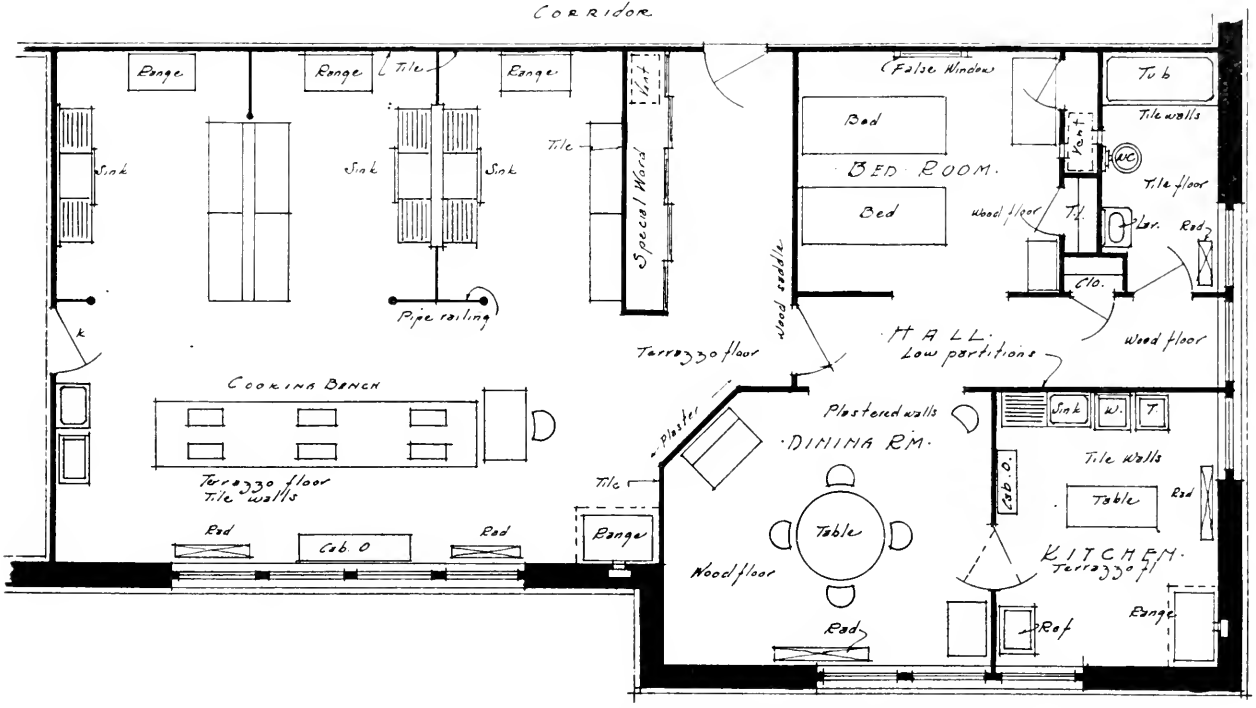


Figure 10. Domestic Science Department in New York City Schools.
By courtesy of Grace Schermerhorn, Supervisor of Domestic Science, New York City Public Schools.

5. "Bungalow" Floor Plans

The following plans are offered as suggestions for bungalows or other types of houses for home making departments:

A combination of a teacherage and home making laboratories is shown in figure 13. Note that the housekeeping and serving work will be taught in the teacherage, thus obviating duplication of equipment. The kitchen of the teacherage furnishes a home kitchen unit. The teacherage is made private through the porch entrance to the laboratories. On the second floor there is no passageway between the teacherage and the laboratory.

Figure 17 shows the plans of a bungalow now under construction for the home making department of the Brownwood High School. This is a vocational school. The building is to be used as a community and school social center. Note the design laboratory which can easily be converted into a reception room. The fireplace adds a real home touch to the building.

Many other Texas towns have manifested an interest in a bungalow for teaching home making, but so far Brownwood is the only one that has the project under way.

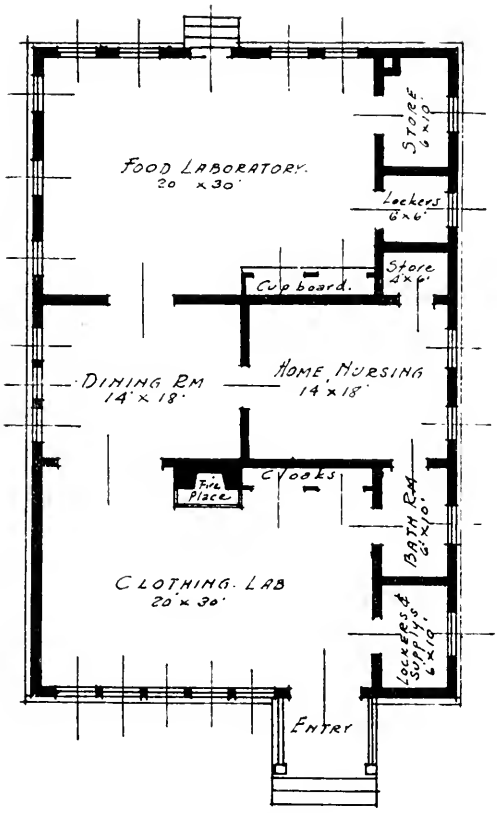

FOOD LABORATORY.
20 x 30'
STORE
6 x 10'
Lockers
6 x 6'
Store
4 x 6'
Cupboard.
DINING RM
14' x 18'
HOME NURSING
14 x 18'
Fire Place
Crooks
BATH RM
6' x 10'
CLOTHING. LAB
20' x 30'
LOCKERS & SUPPLYS.
6' x 10'
ENTRY

Figure 11.

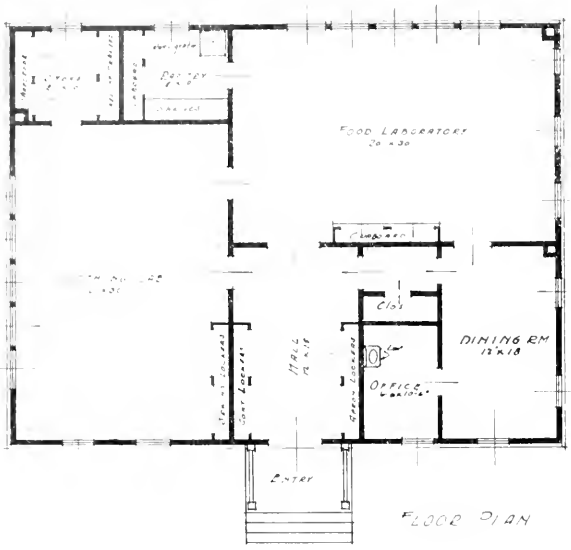

FOOD LABORATORY
20 x 30
DINING RM
12 x 18
OFFICE
HALL
8 x 18
ENTRY
FLOOR PLAN

Figure 12.

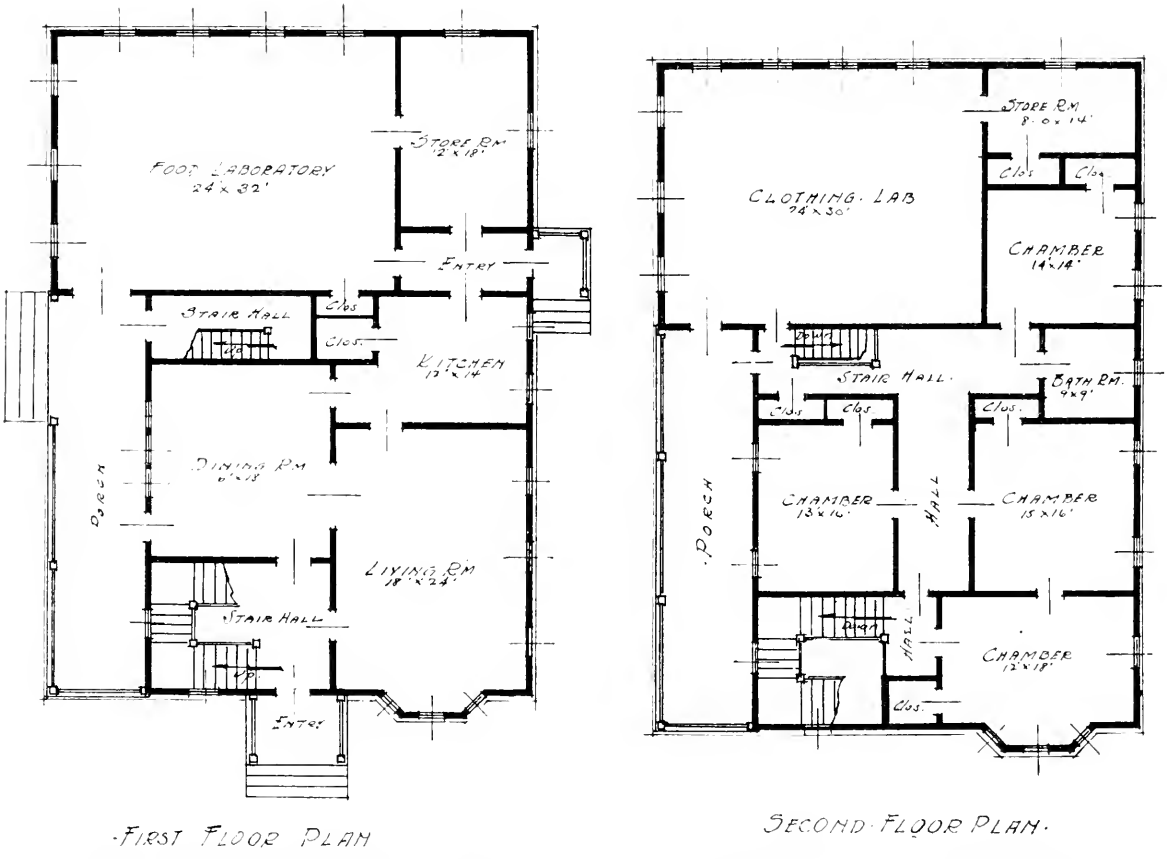
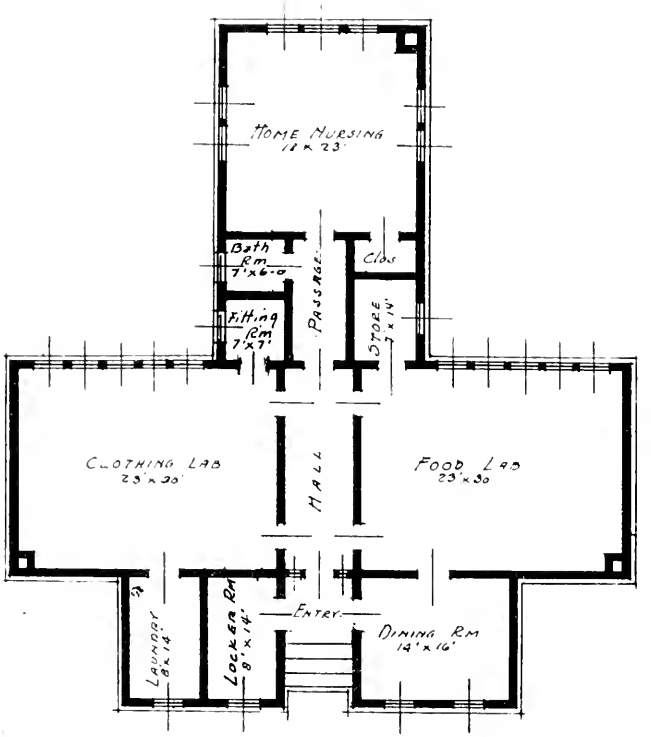


Figure 13B. Floor plans for teacherage and high school department of home making.
See figure 13A, page 19.



FLOOR PLAN

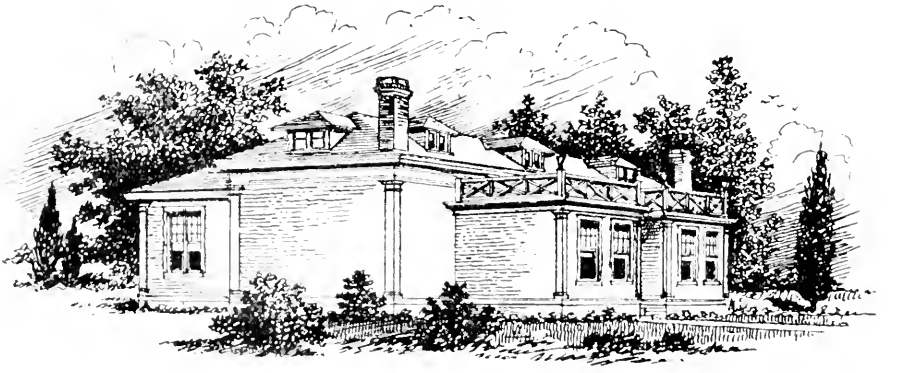
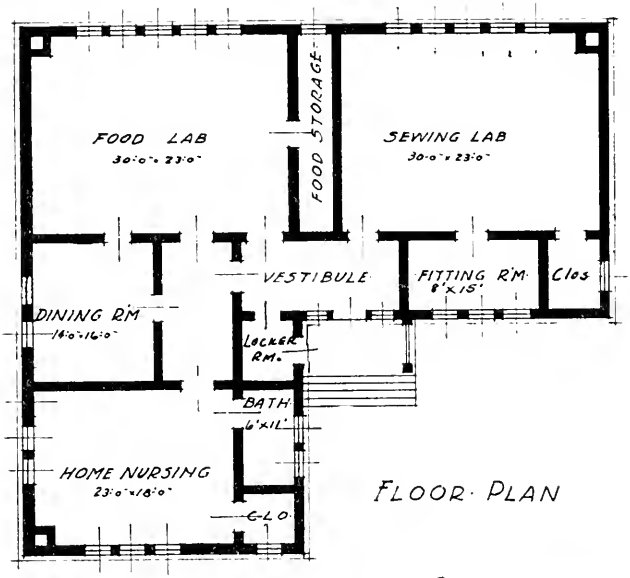


Figure 14.


FOOD LAB
30'-0" x 23'-0"
FOOD STORAGE
SEWING LAB
30'-0" x 23'-0"
VESTIBULE
FITTING R'M
8'X15'
CLOS
DINING R'M
14'-0"x16'-0"
LOCKER R'M.
BATH
6'X11'
HOME NURSING
23'-0"x18'-0"
C-L-O
FLOOR PLAN

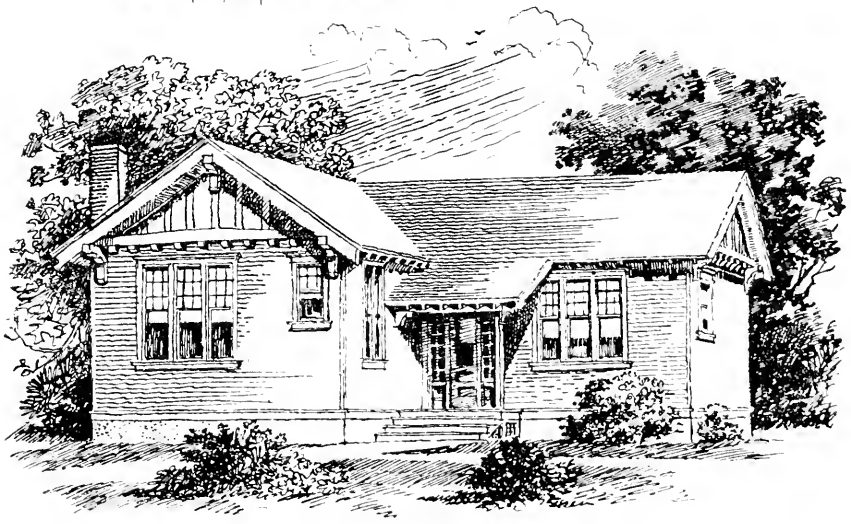
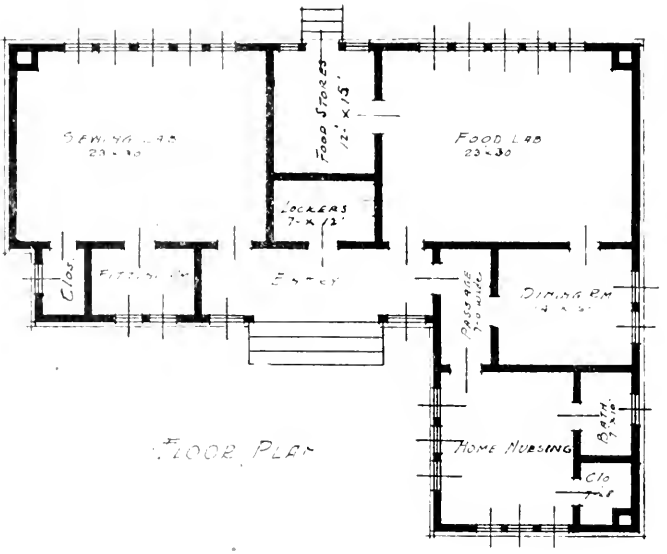
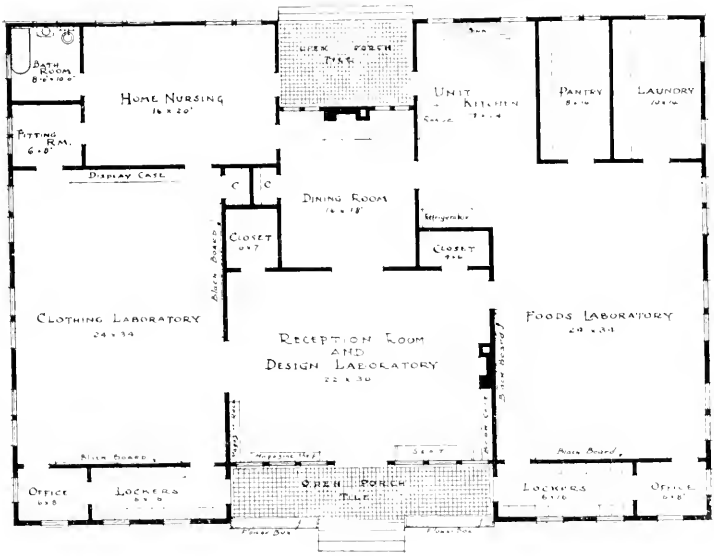


Figure 15.



FLOOR PLAN

Figure 16.



·FLOOR·PLAN·

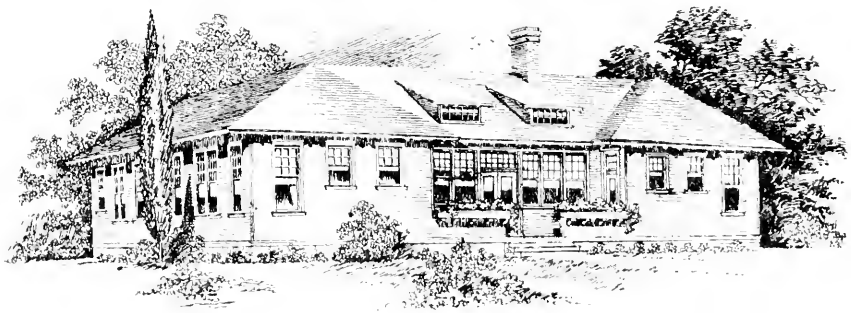


Figure 17. Plan for Vocational Home Economics Department, High School, Brownwood, Texas. This building is in process of construction. It is being built by the day trade class in carpentry.

INDIVIDUAL ROOMS

I. The Food Laboratory

1. *Desk Arrangement.* Too often the school kitchen and the home kitchen are unlike, with the unfortunate result that the school work does not carry over into the home kitchen. Two solutions are being tried for this difficulty—the unit desk and the unit kitchen. The older forms of desk arrangement, hollow square, parallel tables, and others, are so generally known that they need little discussion here. For the most part they are too formal, too crowded, wasteful of space and pupil's energy. They combine the maximum of convenience and minimum of energy output on the part of the teacher but minimum of convenience and maximum of energy output for the pupil.

The unit desk arrangement, figures 18 and 19, embodies the essentials of the home kitchen without the walls or the same arrangement of furniture. Each girl has for her use a table, with a drawer and a cupboard below containing a complete set of cooking utensils (not toy pots and pans); access to a sink; a real stove with an adequate oven, instead of a hot plate and a toy oven. It is necessary to allow aisle space of three feet when the aisle is used by a single row of girls, and five feet when the aisle is used by a double row of girls.

Two typical arrangements are given in figure 20. Plan A (figure 20) is the better arrangement. It provides for four students. Plan B (figure 20) is a compromise in an effort to reduce the expense by omitting one sink. (See figures 18 and 19.)

The unit kitchen arrangement, figures 21, 22, 23, and 33, provides for the same furniture and arrangement as the home kitchen. The equipment and furnishings should be such as can be afforded by the housekeeper of moderate means. Each unit kitchen accommodates three or four girls, hence it falls short in its duplication of the home kitchen situation where the worker is alone. A space approximately 8 feet by 10 feet is adequate for the unit kitchen accommodating four girls.

Attention is called especially to figure 33, which is a perspective of the unit kitchen floor plan shown in figure 22, the details of which are shown in figure 23, A, B, and C. Figures 22 and 23 are shown here through the courtesy of the Federal Board for Vocational Education.

Both the unit kitchen and the unit desk arrangement provide for handling more than individual quantities. In the unit kitchen the girl works in a space having the arrangement and atmosphere of the home kitchen sharing her responsibilities with two or three other girls. At a unit desk the work space does not look so much like a kitchen, but the girl carries an individual responsibility just as she would at home. For these reasons it is difficult to say which arrangement is the better layout for the school kitchen.

A third possibility is a combination of the two (figure 24). For a class of sixteen there can be one unit kitchen and twelve unit desks. The class can be shifted so that each girl works in the unit kitchen and also at the unit desks. Such a plan would have the advantages of both unit kitchen and unit desk, without having the limitation of either mentioned before.

The unit desk, unit kitchen, and combination of unit desk and unit

kitchen, represent the most modern and approved equipment for home making instruction in the high schools. So evident is the superiority of any one of these arrangements over the older forms that no argument is advanced for their preference. The wonder is that we have not realized long ago that our equipment, by its very unlikeness to home equipment, was a handicap, in many instances, instead of an asset.

2. *Desk Design for Student's Table in Unit Desk Arrangement.* Very few manufactured desks are adapted to the unit desk arrangement. Many of the desks are too low; poorly constructed, and have altogether inadequate cupboard and drawer space. Furthermore, they are expensive.

The desk design given in figure 25 is given as a suggestion to school boards wishing to have the tables built locally. In altering this design the following general principle must be adhered to: each student should have a working space approximately 20″x30″. Where space does not permit optimum conditions, 25″x23″ may be used, provided no hot plate takes up a portion of this space. Attention is called to the fact that the unit desk plan allows ample "elbow room." For this reason a smaller table top allowance will not crowd students as much as the older continuous table desks. No table should be less than 33 inches in height. For girls of senior high school 34 inches, or even 36 inches is a better height.

Other desk designs suitable for the unit desk arrangement are shown in figures 26 and 27.

3. *The Table Top.* Table tops should be easily cleaned, non-absorbent, not warped or cracked by heat, fireproof, resistant to acids and alkalis, a reasonable price, attractive in appearance. There is no table top that meets all of these requirements.

Material.	Advantages.	Disadvantages.
Wood: Sugar pine or maple.	Cheap, comparatively. Noiseless. Attractive.	Unless thoroughly seasoned warps with heat and dampness. If unvarnished hard to clean. If varnished needs frequent refinishing. Not fireproof.
Vitrified tile.	Attractive. Fireproof. Not affected by acids and alkalis. Lasting.	Seams wear out thus collecting dirt. Expensive.
Alberene and soapstone.	Easily cared for.	Unattractive. Absorbs grease.
Glass, opalite, vitrolite.	Attractive. Easily cleaned. Non-absorbent. Not affected by acids and alkalis.	Cracks with heat. Expensive. Note.—The cracking is less with thicker slabs. Scratches a little.
Porcelain enamel.	Attractive. Easily cleaned. Cheap. Does not crack or warp with heat. Easily replaced.	Affected by acids. Cracks if struck a hard blow or if food chopper is screwed to table top.

Those schools that wish to build their own desks are confronted by the problem of a choice of tops. On the home built tables wooden tops are not at all satisfactory because they warp.

All things considered, the porcelain enamel top, such as is used on many kitchen cabinets, is the most satisfactory. In order that schools may build their own tables with these tops, manufacturers of such products were asked if they would furnish these tops to the schools direct. One manufacturer has made such a proposition.

The following information was given to the State Department of Education upon request and is printed here for the help of the schools. The most desirable top for the desk shown in figure 25 is size 29″x44″.

The Enamel Products Co., Eddy Road and Taft Avenue, Cleveland, Ohio. Jobbers' price list, Tepco and H. D. construction table tops, effective January 1, 1922: (White enameled tops.)

Size.	Construction.	Standard Size Package Less Carload lot Shipments.
16″x20″	All white	$1.35
24″x36″	Tepco	3.05
25″x40″	Tepco	3.25
26″x41½″	Tepco	3.42
27″x40″	Tepco	3.42
27″x48″	Tepco	4.40
29″x44″	Tepco	4.40
27″x48″	H. D.	4.65
27″x56″	H. D.	6.23

All prices f. o. b. Cleveland, net cash 30 days, 2 per cent discount for all cash within ten days from date of invoice. Acceptance of orders is subject to approval of credit. Prices are subject to change without notice. Carload lot prices upon application.

Quotations covering tops of other sizes than those noted above upon application. When requesting such quotations, specify quantity and size.

Tops listed above are packed 12 of a size to a crate, except sizes 27″x48″, 29″x44″ and 27″x56″, which are packed 6 to a crate, and size 16″x20″, which is packed 20 to a crate. When shipped in less than standard size packages there will be an extra charge to cover crating. In lots of 6 of a size, 25 cents per top extra; in lots of 4, 30 cents; in lots of 2, 55 cents; singly, $1.00 over and above the standard size package price.

Tepco tops are finished all white, and H. D. tops are finished top surface white, flanges black.

It should be distinctly understood that the State Department of Education does not require any specific design or any specific table top. The request for help on designs of desks, and information concerning tops when the desks are to be built locally, or in the manual training shop, have been so frequent that this information is furnished in response to such demands.

4. *Stoves.* The stoves for the laboratory, whether unit desk or unit kitchen is the chosen arrangement, must be real stoves with real ovens suitable for home use. The hot plate and individual sheet metal oven of one thickness are inadequate and unsatisfactory. The fuel in use

in the laboratory should be the fuel in use in the community. For Texas this means, for the most part, gas and oil. One coal or wood range is recommended in laboratories using oil stoves. If gas is the fuel used, a small gas range with two or three burners, oven, and broiler should be furnished to each two or four students. In order to save space and expense, and to place the stoves more conveniently, it is better to select a gas range of the "apartment" type having two or three burners, and a 16-inch oven; one such stove to each two or four girls according to the plan. (See figure 20.)

If oil is the fuel, it is best to furnish for each two girls one four-burner stove, equipped with a built-in oven. It is important that the oven for an oil stove be as substantially built as a gas oven. Much of the unsatisfactoriness of the oil stove is due to the poor quality of portable ovens used with oil stoves. An oven of the type used on the New Perfection oil stove No. 37, by actual tests, bakes as satisfactorily as does a gas oven or an electric oven. Other makes of oil stoves have such ovens. It is poor economy to equip a food laboratory with a poor grade stove. Such is the custom in buying oil stoves.

Oil stoves are of two types—wick and wickless. The wick stove has proved more satisfactory. Wickless stoves often smoke.

Stoves with wicks are of two types; those with a cloth wick such as the New Perfection stove, and those with an asbestos wick such as the Nesco oil stove. The asbestos wick is new and investigation of it is recommended if a school is making a purchase of oil stoves.

Gasoline-gas machines are not recommended for three reasons. (1) They are expensive; (2) if the town is not supplied with gas, it is not desirable nor practical to supply the school kitchen with gas. (The college laboratory is an exception to this statement.) (3) Many of the gas machines in Texas today are a source of constant annoyance; others render good service. The machine that pipes oil to all the stoves at once has also proved expensive and unsatisfactory. For a town not supplied with gas, the best laboratory plan is one unit kitchen with a coal or wood range and unit desks with good oil stoves and *good ovens.*

Gasoline is not advocated because of the danger in using it under laboratory conditions. Electricity is recommended wherever it is in use in the town for fuel or where such a plan is feasible. This depends entirely on the local rate and current. It is to be hoped that electricity will, in the future, be available as a household fuel.

5. *Sinks.* In the unit kitchen a sink should be chosen that is suitable for a home kitchen. A white porcelain enamel sink with double drain board is desirable. The working surface of the sink should be 34 to 36 inches above the floor. The sink should be cast in one piece. Laundry tubs should be provided. A sink can be procured that has laundry tubs under the drain board.

One very desirable sink to use in the unit desk arrangement is shown in figure 28. This sink is 3′x2′. Its height can be adjusted. The space in the sink is adequate for two dish drainers. The sink is equipped with two sets of hot and cold water faucets and with nickel-plated soap dishes. It is possible and practical to scald and drain the dishes in the sink. No drain board is needed since the table tops of white porcelain enamel are as serviceable as the usual drain board.

This sink is a Standard Sanitary Manufacturing Company product and may be ordered through any local dealer. The sink does not at present occur in any catalogue since it is an adaptation made especially at the request of the State Department of Education. The following quotation is given from a letter written at the request of the State Department of Education:

Standard Sanitary Manufacturing Co., general office, Pittsburgh, Texas distributing offices, Dallas, Fort Worth, Houston, and San Antonio. (See figure 28.) "Texas," Standard Plate P-6456, porcelain enameled inside roll rim wash sink with center outlet; supported on painted pedestals with painted pipe supports over side of sink; fitted with two nickel-plated open standing waste, 2 nickel-plated combination stream regulating double wash sink cocks, with four-ball china index handles and special brass double connection, less brass pipe and trap. Width over rim, 24"; length over rim, 36"; net, each, $58. Add for 1½" P-11462 nickel-plated "S" trap to floor, net, each, $6.50; ¾" nickel-plated brass tips, net, per foot, 75 cents; ¾" nickel-plated elbows or tees, net, each, 70 cents.

The above prices are based on factory shipment with full freight allowed to Texas common points, Texas schools.

It should be understood that this sink is offered merely as a suggestion and is not a requirement. As far as we know, this is the only sink of this design manufactured by any company and it is not offered by way of advertising the sink, but for the convenience of the schools wishing a sink for the unit desk arrangement.

6. *Utensils and Other Furnishings.* For both the unit kitchen and the unit desk the equipment should be of the kind and quality desirable and usable in the home kitchen.

The following list is the equipment required by the State Department of Education for accredited courses. The list is based upon the single desk or the unit desk arrangement.

7. EQUIPMENT FOR TEACHING HOME ECONOMICS

School Kitchen Laboratory (16 Students).

GENERAL EQUIPMENT

Required.

1 large towel rack.
1 waste paper basket.
1 good range—coal, wood, gas, electricity or oil (built-in-oven).
Blackboard.
1 sink for each 6 or 8 girls.
1 supply table.
1 desk for each student, providing:
  Top space at least 20″x30″.
  Drawer.
  Cupboard.
  Towel rack.
Stoves.
  At least 1 burner space per student, plus oven space. For each two girls a three or four-burner oil stove is satisfactory, giving two burners for oven and one burner for other cooking; or a two-burner gas or electric stove with oven.
A good oven for each 4 students.
1 refrigerator.
6 wire egg whips.
4 cylindrical potato ricers or fruit presses.
2 coffee pots.
1 percolator.
1 or 2 tea balls.
6 bowls (approximately 9 inches diameter).
6 bowls (approximately 11 inches diameter).
6 pint fruit jars.
6 quart fruit jars.
6 ½-pint fruit jars.
2 ½-gallon fruit jars.
2 good bread knives.
2 good butcher knives.
2 funnels (assorted sizes).
1 garbage pail (white preferred).
1 roaster.
1 tube cake pan.

Required.

2 large pyrex or earthenware baking dishes.
1 wooden mallet.
1 ice cream freezer (1 gal. or 1½ gals).
2 ice picks.
1 broom.
1 mop.
1 flour can (48-lb. capacity, sifter in bottom).
2 bread pans (1-lb. loaf).
2 can openers.
1 corkscrew.
2 apple corers.
1 dustpan.
1 food chopper (medium size).
2 long-handle kitchen forks.
1 knife sharpener.
1 enamel colander.
1 teapot.
1 tin or stone container for sugar.
1 large double boiler.
2 large sauce pans.
1 large preserving kettle.
1 wire rack for preserving kettle.
1 wrought iron kettle for frying.
1 wire basket for frying.
1 paper roll and rack.
1 or 2 large skillets.
1 large teakettle.
1 grater (rotary preferred).
2 hand graters.
2 long-handle skimmers or slit spoons.
2 enamelware round dippers.
3 doz. aluminum molds for gelatine.
1 steam pressure cooker.
1 nut cracker.
6 doz. sanitary dish cloths (for dish washing).
6 doz. dish towels (drying dishes).
4 nickel plated trays (one small, one 12 inches).
1 scale, family, spring, upright dial, 24 lbs. capacity.

ADDITIONAL EQUIPMENT

Recommended as Desirable and Useful (Not Required).

Bulletin board.
Pastry tubes (one set).
Pastry wheels.
Hammer.
8 bread boards.
1 quart measure.
1 fireless cooker.
A sink to each four girls.
Sink strainer for each sink.
4 cake coolers.

DESK EQUIPMENT FOR CLASS OF SIXTEEN GIRLS

One for Each Student.

Required.

16 (Rogers or Community) plated knives.
16 (Rogers or Community) plated forks.
36 (Rogers or Community) plated teaspoons.
36 (Rogers or Community) plated tablespoons.
16 spatulas (6-inch blade).
18 good steel paring knives.
18 Dover egg beaters.
16 biscuit cutters.
16 ½-pint glass measuring cups.
16 ½-pint aluminum or tin measuring cups.
16 small wooden spoons (orange wood or holly, preferred).
18 enamel or earthen custard cups.
16 rolling pins.
16 fine mesh wire sieve strainers (6 inches in diameter).
16 dishpans (12 or 14 inches in diameter) or 8 dishpans and 8 dish drainers.
16 stools.
16 pyrex or earthenware baking dishes (½-quart size).
16 towel rods (on desks).
16 double boilers, 1 quart, enamel or aluminum.
16 saucepans and covers, 1½ pint, enamel or aluminum.
16 saucepans and covers, 1 pint, enamel or aluminum.
16 small fry pans (6 inches in diameter).
16 glasses.
16 small pie tins.
16 shallow layer cake pans (utensil pans).
16 tin bread pans (½-lb. loaf).
16 small china bowls (3 or 4-cup capacity or approximately 6 inches in diameter).
16 enamelware pudding pans (1 quart size).

Recommended as Desirable and Useful (Not Required).

16 plates (plain white, 7-inch).
16 cups and saucers.
16 soup or cereal dishes.

NOTE.—These dishes are suggested for the desks in order that each girl will have a cup, saucer, bowl, and plate at her desk for serving her products.

One for Each Group of Two Students.

Required.

8 muffin pans (6 or 8 holes).
8 Russian iron baking sheets (approximate size 10″x15″). (Square cake pans may be substituted).
8 teakettles (small or medium) if no hot water is available.
8 pepper shakers.
8 covered glass jars for salt.
10 soap dishes (china slabs) (unless soap shakers are provided).
8 asbestos mats.
8 glass lemon squeezers.
8 heavy tin square pans (approximate size 10″x12″x1½″).

ADDITIONAL EQUIPMENT

Recommended as Desirable and Useful (Not Required).

8 coffee pots.
8 quart ice cream freezers.
8 stone jars for waste, white preferred, size 6 inches to 8 inches high.
8 bread stick pans.
8 water pitchers (1 qt.).

The following list is the equipment recommended by the State Department of Education for accredited courses. The list is based upon the *unit kitchen* arrangement.

GENERAL EQUIPMENT USED BY ALL FOUR KITCHENS

1 refrigerator.
1 flour can (48-lbs. capacity).
1 large crock for sugar.
1 knife sharpener.
1 paper rack and roll.
1 nut cracker.
1 bread mixer.
1 hammer.
6 doz. dish cloths.
6 doz. cup towels.
1 bulletin board.
1 blackboard.
1 clock.
1 supply table or wheeled tray.
1 wooden mallet.

UNIT KITCHEN LABORATORY

General Equipment for Each Unit Kitchen.

1 towel rack.
1 waste paper basket.
1 good range—coal, wood, gas, electricity or oil (built-in oven).
1 sink with laundry tub—double drain board.
1 kitchen cabinet.
1 cylindrical potato ricer or fruit press.
1 coffee pot.
1 percolator.
1 tea ball.
6 bowls (approximately 9 inches diameter).
6 bowls (approximately 11 inches diameter).
6 pint fruit jars.
6 quart fruit jars.
6 ½-pint fruit jars.
2 ½-gallon fruit jars.
2 good bread knives.
2 good butcher knives.
1 funnel.
1 garbage pail (white preferred).
1 roaster.
1 tube cake pan.
1 sink strainer.
2 large pyrex or earthenware baking dishes.
4 (Rogers or Community) plated knives.
4 (Rogers or Community) plated forks.
4 (Rogers or Community) plated teaspoons.
4 (Rogers or Community) plated tablespoons.
4 spatulas (6-inch blade).
4 good steel paring knives.
4 Dover egg beaters.
2 egg whips.
2 biscuit cutters.
2 ½-pint glass measuring cups.
2 ½-pint aluminum or tin measuring cups.
2 small wooden spoons (orange wood or holly preferred).
6 enamel or earthen custard cups.
2 rolling pins.
2 fine mesh wire sieve strainers (6 inches in diameter).
2 muffin pans (6 or 8 holes).
2 Russian iron baking sheets (approximate size 10″x15″).
1 salt and pepper shaker.
1 covered glass jar for salt.
1 soap dish (china slab).
1 pastry wheel.
1 ice cream freezer (1-qt. or ½-gal.).
1 ice pick.
1 broom.
1 mop.
2 bread pans (1-lb. loaf).
2 can openers.
1 corkscrew.
2 apple corers.
1 dustpan.
1 food chopper (medium size).
2 long-handle kitchen forks.
1 enamel colander.
1 teapot.
1 tin or stone container for sugar.
4 cake coolers.
1 double boiler.
2 large saucepans.
1 large preserving kettle.
1 wire rack for preserving kettle.
1 wrought iron kettle for frying.
1 wire basket for frying.
1 skillet.
1 teakettle.
1 quart measure.
1 rotary grater.
1 hand grater.
1 long-handle skimmer (or slit spoon).
1 enamelware round dipper.
1 doz. aluminum molds for gelatine.
1 steam pressure cooker.
1 nickel plated tray.
1 scale, family, spring, upright dial, 24-lbs. capacity).
2 dishpans (14 or 15 inches in diameter).
4 pyrex or earthenware baking dishes (¼-quart size).
3 double boilers (selected sizes).

4 saucepans and covers (selected sizes).
6 glasses.
4 pie tins.
4 shallow layer cake pans (utensil pans).
4 tin bread pans.
3 small china bowls (3 or 4-cup capacity or 6 inches diameter).
2 enamelware pudding pans (1-quart size).
4 asbestos mats.
1 glass lemon squeezer.
4 heavy tin square pans (approximate size 12″ square by 1½″).
1 set pastry tubes.
1 timbale iron.

DESIRABLE ADDITIONAL EQUIPMENT

1 fireless cooker.
1 enamel pitcher.

II. Equipment for Meal Service

1. *The Room and Its Furnishings.* A separate room is recommended for table service. The idea is prevalent that on state occasions a meal is to be served to outside guests by the domestic science class and that, while a dining room is desirable, some other room can be pressed into service at such times. As a matter of fact, such courses were refused affiliation credit the past year. The state course of study is based upon meals. It is as necessary to teach meal service, table etiquette, duties of host and hostess to the girls as it is to teach meal preparation and waitress duties for state occasions. In fact, the teachable content connected with the serving of food, and the eating of food, is, if anything, more important than the mere preparation of food. Provision for such teaching must be made either as a dining room, or as equipment for table service in the kitchen itself.

If unit kitchens are used, it is desirable to have a small table and all necessary tableware for four persons included in the equipment of each unit kitchen. The tables and chairs will not only serve for dining tables, but as a place for class discussion, which is a necessary part of class instruction, especially when the laboratory work is carried on in unit kitchen. The small tables shown in figure 21 illustrate this plan.

DINING ROOM EQUIPMENT REQUIRED FOR ACCREDITED COURSES

Required.	Required.
1 dining table.	1 serving spoon.
6 chairs.	1 serving fork.
1 serving table or buffet (preferably without mirror).	1 carving set.
2 tablecloths.	12 thin, plain glasses.
2 luncheon cloths.	2 pairs salt and pepper shakers.
1 doz. dinner napkins.	1 water pitcher or jug.
1 doz. tea napkins.	6 soup bowls or cream soup cups.
6 tray doilies.	12 breakfast plates.
1 bowl for flowers.	12 luncheon or small dinner plates.
6 knives.	12 salad plates.
6 forks.	6 bread and butter plates.
6 tablespoons.	1 cream and sugar.
6 soup spoons.	1 chop plate or 12-inch platter.
6 salad forks.	1 platter (14 inches).
18 teaspoons.	2 open vegetable dishes.
1 sugar shell.	1 round covered vegetable dish.
1 cold meat fork.	6 cups and saucers.
	1 gravy boat.

Note.—Simple, plain china is recommended.

Additional Equipment Recommended as Desirable and Useful (Not Required).

1 rug.
1 tea wagon.
Both serving table and buffet.
All equipment for twelve instead of six.
Butter spreaders.
Bouillon spoons.
After dinner coffee spoons.
Cream ladle.
Sugar tongs.
Oyster forks.
Iced tea spoons.
Pickle forks.
6 finger bowls.
Flower receptacles.
4 doz. punch cups.
6 pairs individual salts and peppers.
Celery dish.
Bonbon dishes.
After dinner coffee cups and saucers.
Iced tea glasses.

NOTE.—It is suggested that a saving in expense may be effected by purchasing breakfast room sets, unpainted, and having the girls in the home economics classes finish same with two coats paint, one coat enamel and one coat Valspar.

A separate room for a dining room is best, but where the food laboratory is large enough and *no other space* available, the dining room equipment can be placed in a portion of this laboratory. Meal service must be taught regularly and equipment provided therefor.

8. *Built-in Furniture for Food Laboratory and Storeroom.* In the food laboratory or in a storeroom connecting with the laboratory, storage cases are needed. When possible such cases should be built flush with the wall. All available space should be used for cases and lockers.

Each student should have a locker for her apron. These lockers may be constructed as a series of shelves 8 to 10 inches apart, size 14 inches broad by 10 inches deep, enclosed by a paneled door or roller partition, or sliding door, with a lock. For design, see figures 29 and 30.

A useful storage case is one similar to figures 31 and 32. The glass-doored portion above is equipped with shelves. The open space makes the table space useful since the doors to the upper portion may be opened without clearing the table space.

No two laboratories have the same amount of space available for storage cases. The sketches given here are merely suggestive of cases that are desirable.

The same size table can be used for supply and demonstration table as the one used for student's table (figure 25). The arrangement of space will differ from the student's table. Instead of two cupboards at the end of the table, on one side a cupboard and a series of drawers may be built. The table top should be the same material as the unit desks.

A blackboard about five or six feet long is necessary—also a bulletin board of cork, linoleum, or burlap.

Each laboratory should own a set of Langworthy food charts. (These are colored charts showing composition of the common articles of food—procurable from the Bureau of Publication, Washington, D. C., for $1.00.) In order to preserve these charts in a usable form they should be mounted on beaver board, framed in light wood or metal, mounted on a rod, as the leaves of a book, and enclosed in a case hung on the wall.

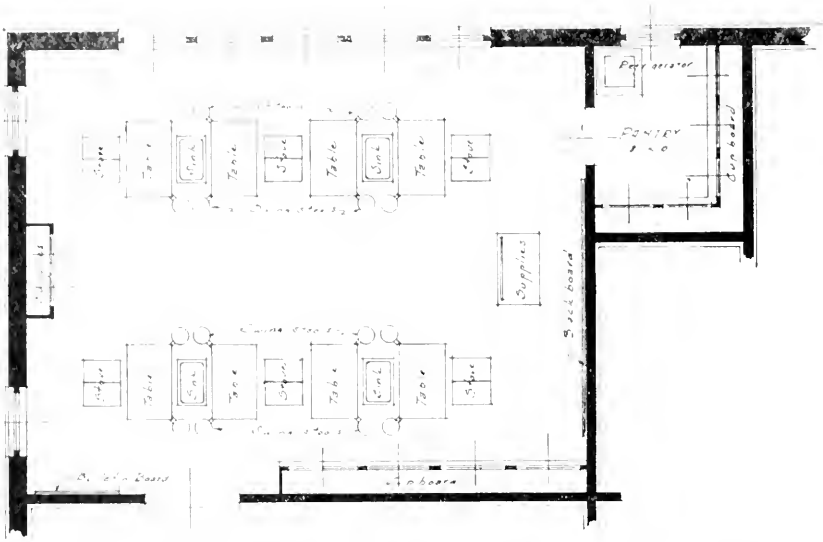


Figure 18. Unit desk arrangement for food laboratory. Plan B. See figure 20.

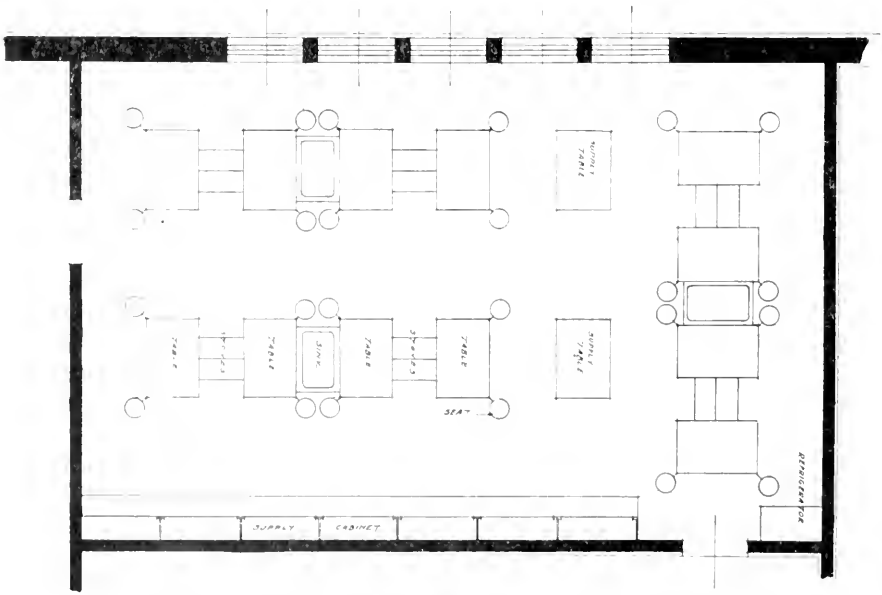
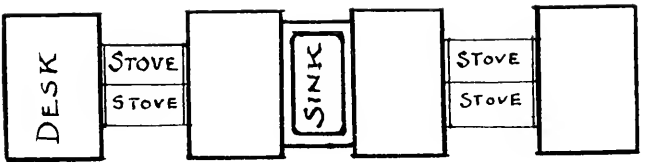
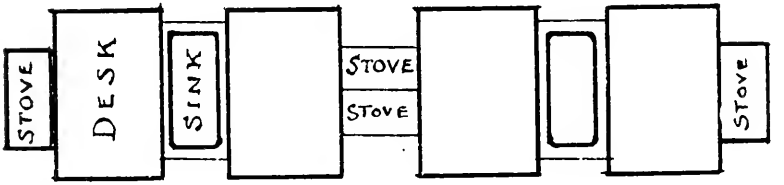


Figure 19. Modification of unit desk arrangement. Plan A. See figure 20. (Plan B is preferable.)



PLAN A



PLAN B

Figure 20. Details of unit desk arrangement. Plan A shows one sink for eight girls. Plan B shows one sink for four girls. Plan B is preferable but more expensive.

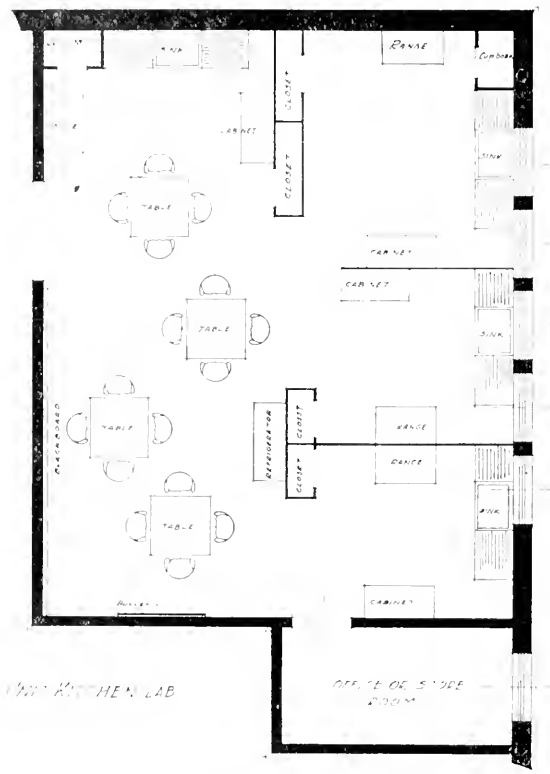


Figure 21. Unit kitchen arrangement. Each kitchen accommodates four girls. The small tables are for recitation and class discussion, also used for serving. See also figures 22 and 33. For details of the unit kitchens see figures 23A, 23B, 23C.

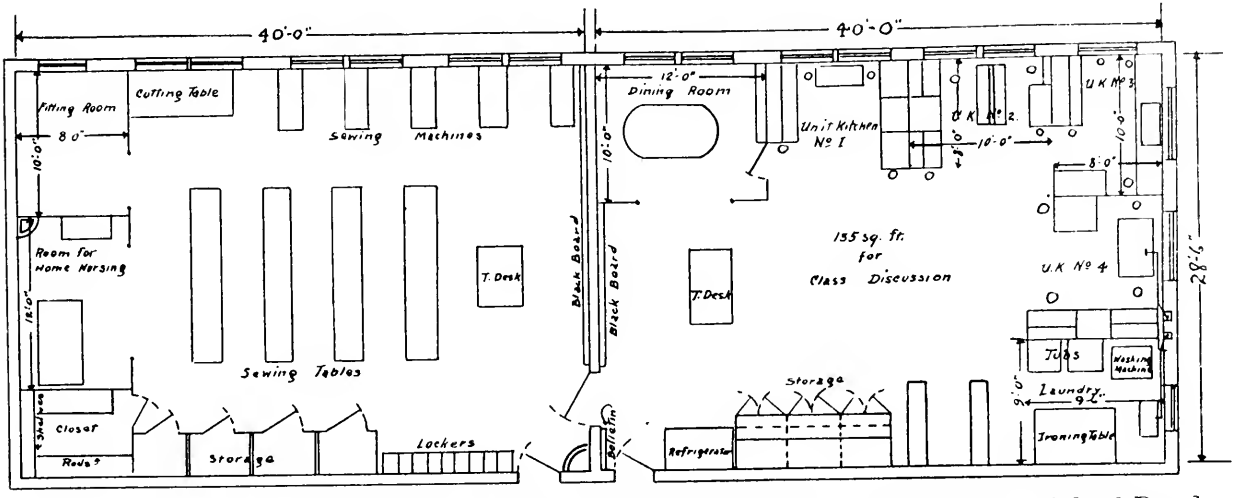


Figure 22. Two rooms equipped to provide home making activities. By courtesy of Federal Board for Vocational Education.

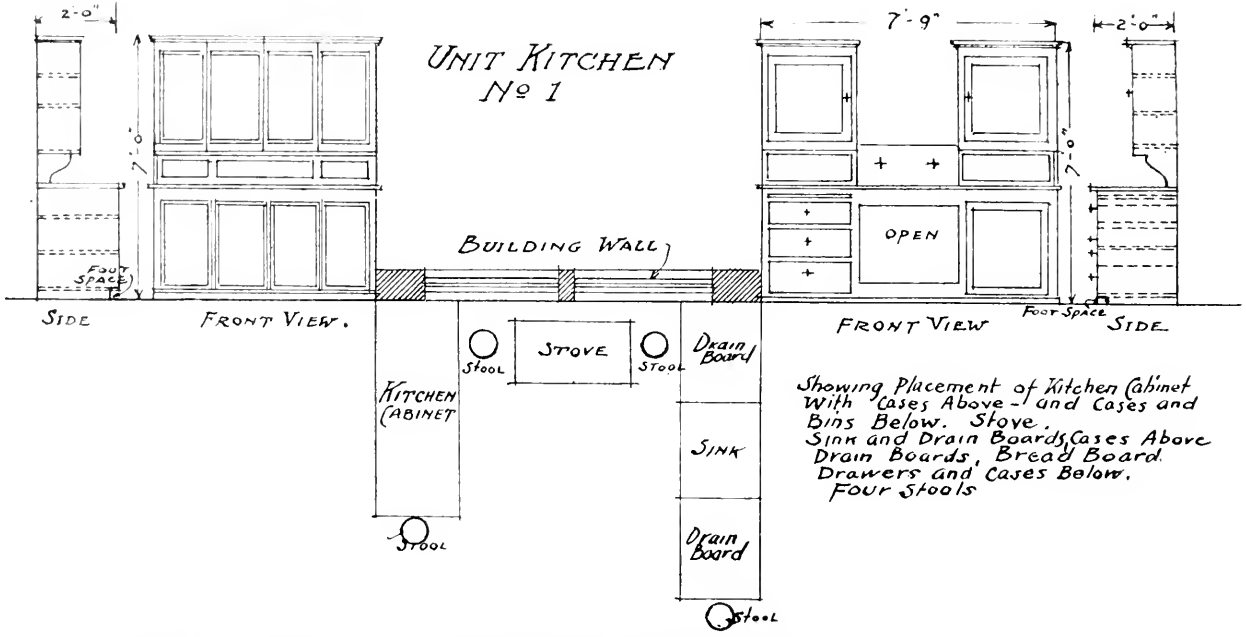


Figure 23A. Details of unit kitchen No. 1, figure 22 and figure 33. By courtesy of Federal Board for Vocational Education.

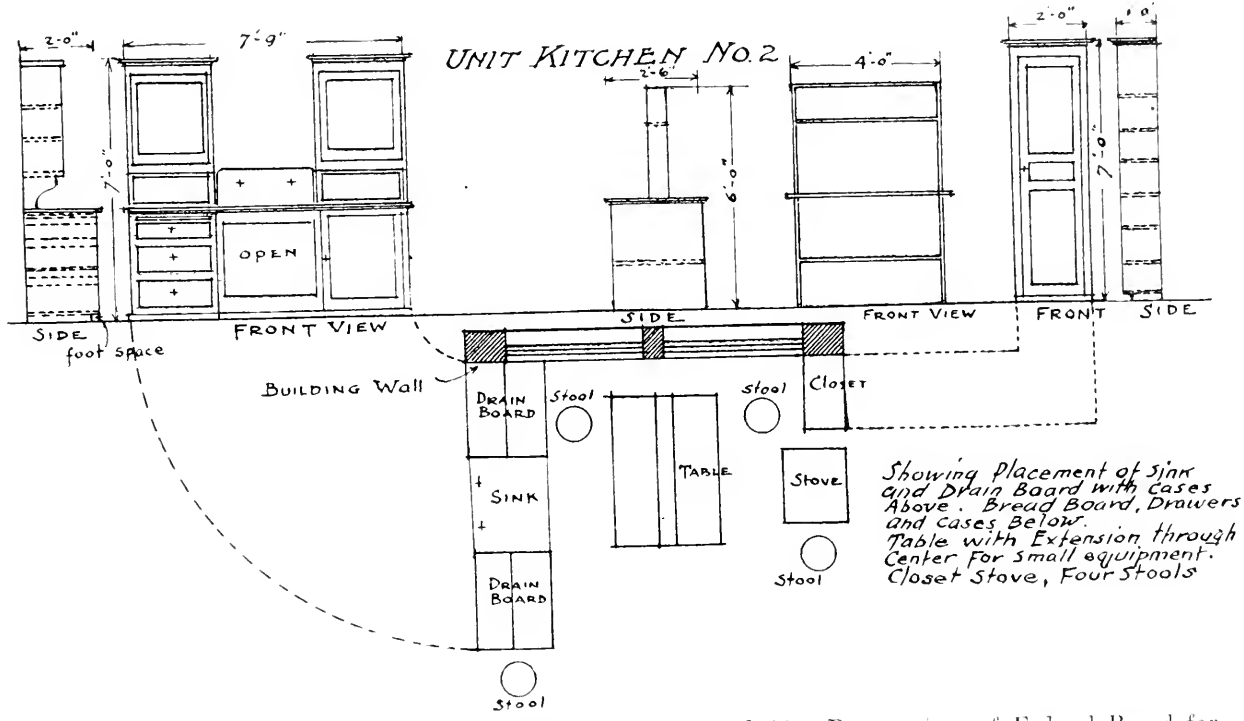


Figure 23B. Details of unit kitchen No. 2, figures 22 and 33. By courtesy of Federal Board for Vocational Education.

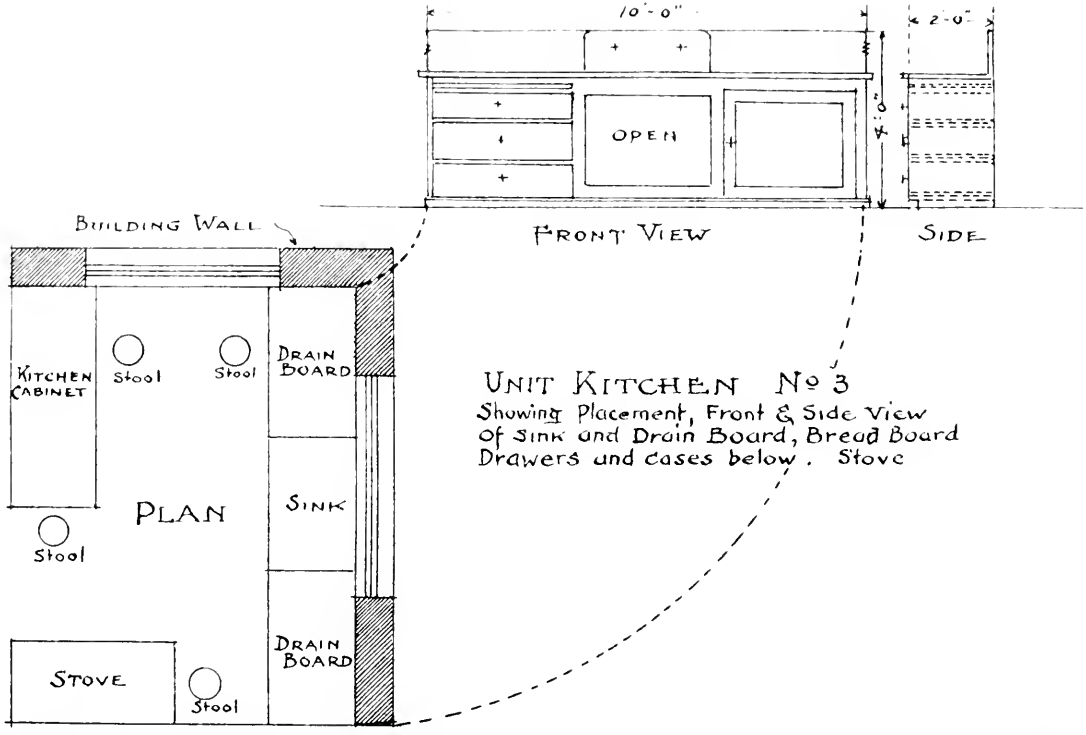


Figure 23C. Details of unit kitchen No. 3, figure 22 and figure 33. By courtesy of Federal Board for Vocational Education.

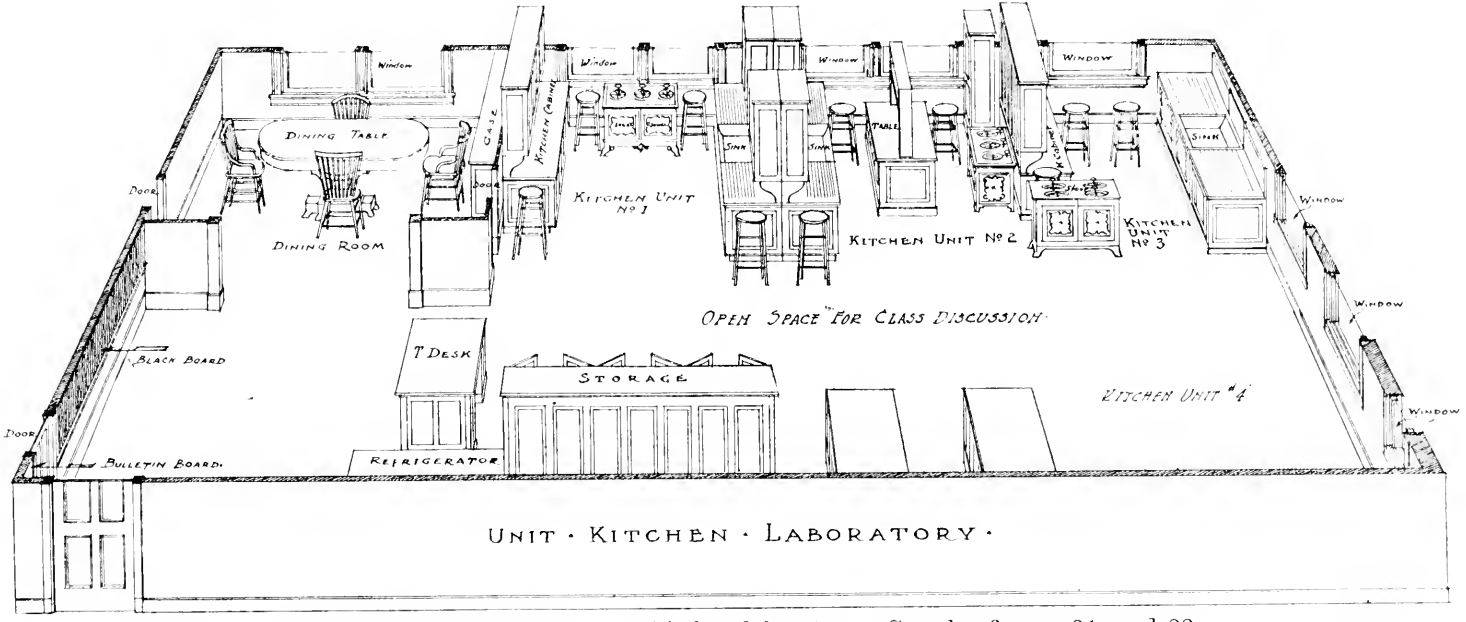


Figure 33. Perspective of unit kitchen laboratory. See also figures 21 and 22.

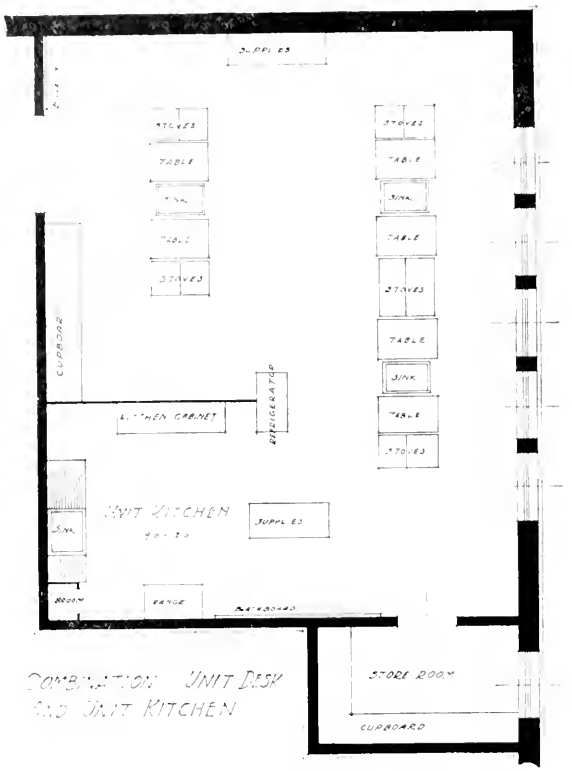


Figure 24.

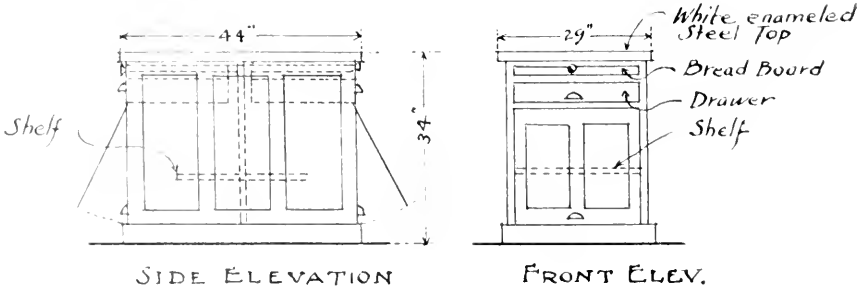


Figure 25. For the unit desk arrangement.

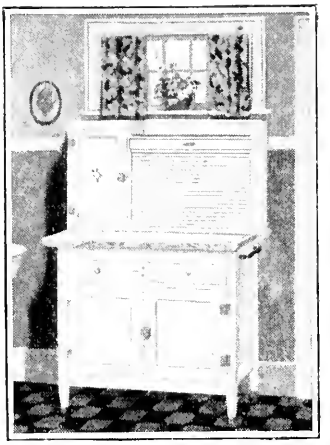


Figure 26.

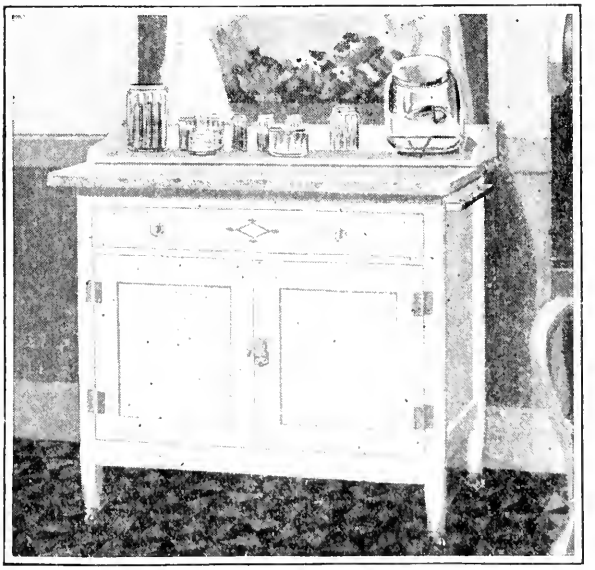
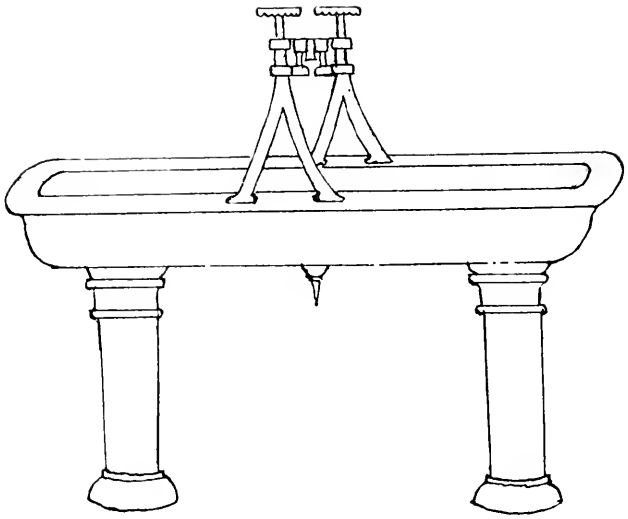
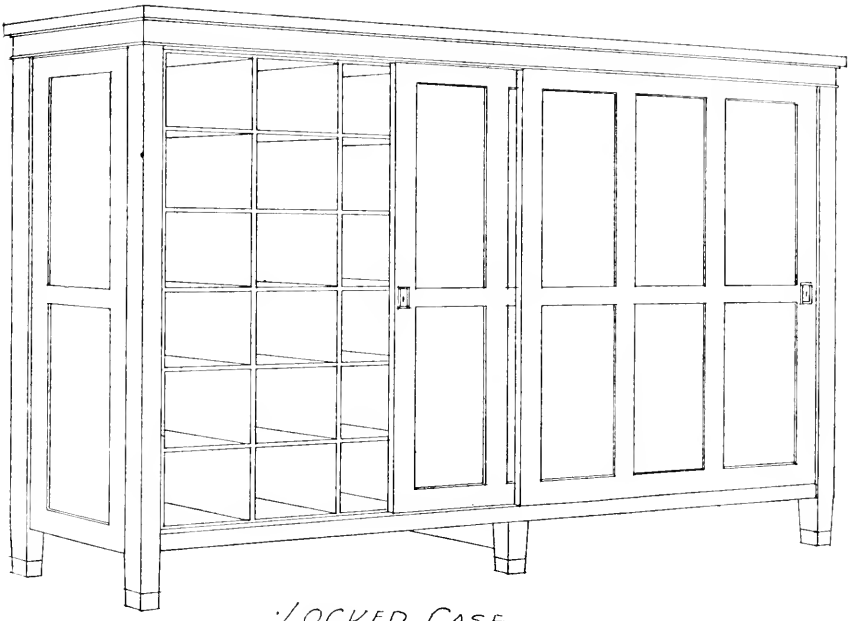


Figure 27. (See also figure 26.) Types of cabinets usable in both unit kitchen and unit desk laboratory arrangements.



SINK FOR UNIT DESK ARRANGEMENT

Figure 28. The above sink is porcelain enameled, roll rim, with center outlet; fitted with two nickel-plated soap dishes, double wash sink cocks, supplying both hot and cold water; size two feet by three feet. (See page 34.)



LOCKER CASE
COOKING OR SEWING CLASS

Figure 29.

UNIT APRON LOCKERS

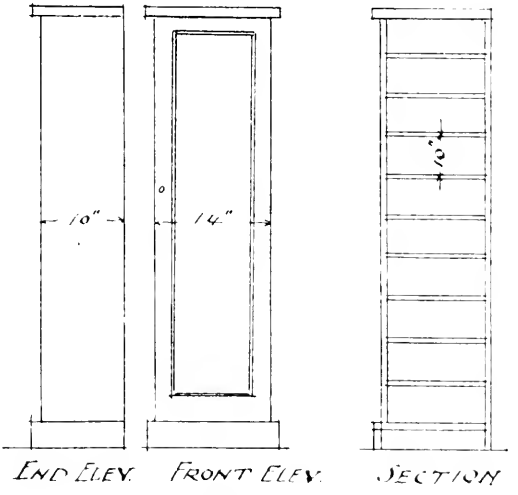


Figure 30.

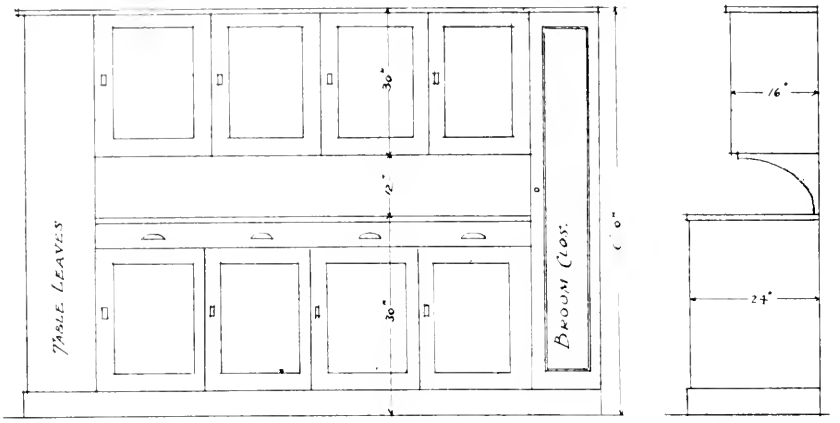


Figure 31. For food laboratory or connecting storeroom.

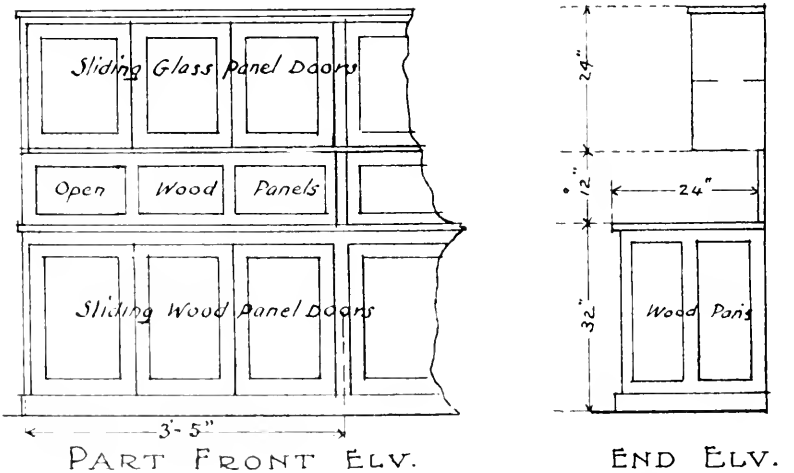


Figure 32. For food laboratory.

III. The Clothing Laboratory

1. *General Conditions.* Good lighting is essential for the clothing laboratory. North light is preferable, and the tables and machines should be so arranged that light comes from the student's left side. If there are windows on two sides of the room, they should be at the left and at the rear. The textiles and clothing laboratory should have a small communicating room (8'x10' or larger) for a fitting and storeroom. This room should be supplied with both natural and artificial light. If the room is sufficiently large and well ventilated and lighted, it is a good place for laundry tubs and ironing boards, if no other space is available. In which case, electric service outlets should be provided for the electric irons and possibly for an electric washing machine.

The usual furnishings of the clothing laboratory consist of sewing tables for students, chairs, machines, a teacher's desk, ironing boards and irons, triple mirror, fitting stand, cutting table, blackboard, and a bulletin board. A chemical laboratory table for a chemical study of textiles is desirable in the clothing laboratory, though it is less usual than the other furnishings suggested. For a proposed arrangement of these furnishings, see figure 34.

2. *Tables.* Students' tables for sewing vary in type from single tables for each student to tables for four students. The most desirable table is one that accommodates two or four students on the same side. (See figure 35.) The objections to tables for two girls on each side are that two students will be at a disadvantage as far as the light is concerned, also visiting is more prevalent. The tables may be built with or without drawers. The drawers add to the expense and are not necessary since each student will have a locker.

Table space for each student should be three feet long and two feet deep. All the sewing tables should not be the same height in order to accommodate more comfortably girls of different height—27", 28", and 30½", are suggested variations in height.

A very convenient table is one built with a shelf of slats two inches wide, paralleling the entire table top, four or five inches under the table top. This provides a place for sewing boxes and materials during the class time. Since it is made of slats instead of solid wood, it prevents accumulation of scraps and trash.

A cutting table for each laboratory is very desirable. This should be higher than the other tables and may contain a long drawer for patterns and yard sticks. Convenient dimensions are height, 34 to 36 inches; width, 3 feet; length, 8 feet. A drop leaf of 18 inches width may be placed on one or both ends of the table to extend the cutting surface.

The teacher should be provided with a flat top instructor's classroom desk.

3. *Chairs.* It is essential that comfortable chairs be procured. Bent-wood chairs are strongly built, light, and not expensive. The room must contain a chair for each student, one for the instructor and one at each sewing machine.

4. *Machines.* One machine, in common use and of good make, must be provided for each three or four girls in the class. Some Texas schools have experienced great difficulty in keeping the machines in good repair, and in getting needles because they have bought a machine for which no service is maintained in the community. In a laboratory where several machines are provided, at least one electric machine is recommended. Second-hand machines are usually undesirable. Attention is called to the fact that the Singer sewing machine gives a discount to schools. Any school buying Singer sewing machines should ask the agent through whom the purchase is made for this price. It is desirable to provide machines of different types.

5. *Pressing Facilities.* Three types of ironing boards are in general use, the collapsible style, a wall cabinet one, and a stationary one. The collapsible one is the cheapest, but is usually in the way unless a closet is provided for its storage. The stationary board is perhaps the most convenient to use, but it requires permanent floor space and is more or less unsightly in a room when not in use. The wall cabinet board is economical in space and cost, and is the most desirable. See figure 36.

Electric irons should be used if electric current is available. For safety a wall plug, provided with a red light to indicate when the iron is "turned on" should be furnished. Plugs for the irons must be near the ironing boards.

6. *Mirror.* A triple mirror is most satisfactory, though a full length mirror is acceptable. The mirror may be attached to the wall, or it may be set in a frame on rollers. The center glass should be 48″ to 54″x20″, the side glasses 42″ to 50″x18″. The expense of providing a mirror may be reduced by buying the mirror by the square foot and having it set in a frame. A beveled edged mirror is expensive and unnecessary. Texas firms furnishing mirror glass are listed in the section on addresses.

7. *Cases.* At least three cases are needed for the clothing laboratory and storeroom, a case for students' lockers, a wardrobe for hanging garments, and a storage case. Desirable additions are a wardrobe for coats and cloaks, a rack for magazines and books, and an exhibit case.

Lockers for students are more convenient if placed in the laboratory. It is desirable that these lockers be built into the walls. Each student should have a minimum space of 12″x12″x20″ (deep) with individual locks (figures 29, 37, 38). Some teachers have found small padlocks furnished by each student convenient.

The wardrobe is used for finished or partially finished garments. Its dimensions should be determined by the space available. It is desirable to have a wardrobe not less than 6 feet long and 20 to 24 inches deep. It should be fitted with a rod in the top, through the center, for coat hangers. The case may have deep drawers at the bottom and a shelf at the top (above the rod for coat hangers). The doors may be sliding doors of glass or wood (figure 39).

The storage case may consist of a series of deep drawers with a cupboard section above as in figure 10.

8. *Chemistry Table.* The usual chemistry table is suitable for the chemistry table in the clothing laboratory. Such a table is usually 24'x4'x36" and accommodates eight students. One such table is adequate. Designs and prices may be found in catalogues from concerns manufacturing laboratory furniture. See addresses.

9. *Requirements of the State Department of Education for Accredited Clothing Work.*

CLOTHING LABORATORY EQUIPMENT

Minimum Required.

Sewing tables: Either single tables 24"x60"x23" to 30½" (height), accommodating two girls, or double tables, 48"x60"x30". Of the two, the single tables are decidedly preferable.
One sewing machine in good working order, for every four girls.
One good, full length mirror for every laboratory used for clothing. A triplicate mirror is preferable. A panel mirror and large hand mirror are acceptable.
A locker, 12"x12"x20", built of hardwood (dust and mouse proof), for each student of clothing.
Hanging space, closet, wardrobe, or display case, with rod lengthwise for coat hangers. Depth of space not less than 20 inches.
A coat hanger for each girl.
Drawer space for supplies and finished folded garments.
One yard stick for every two girls.
One comfortable straight chair for each student.
One comfortable chair at each sewing machine.
Iron for pressing, electric preferred.
Fitting space (may be separated off by screens).
One ironing board with pad and slip cover.
Blackboard (four or five feet sufficient).
One teacher's desk and chair.
Two dress forms (can be made in class).

Additional Equipment Recommended as Desirable and Useful (Not Required).

1 cutting table, 36 inches high, with a drawer for yard sticks, patterns, etc.
1 sewing machine to every three girls.
A large hand mirror in the event a panel mirror is used.
Individual supply boxes of uniform size.
A glass display case would serve the double purpose of hanging finished garments and at the same time showing them off.
If classes are large, it may be well to have two irons and ironing boards, since some laundering is required.
A fitting room and fitting stand.
Two slip covers for ironing board.
Bulletin board.

NOTE.—Each student should provide her own individual equipment, such as tape measure, thimble, needles, scissors, pin cushion, thread, sewing box or bag.

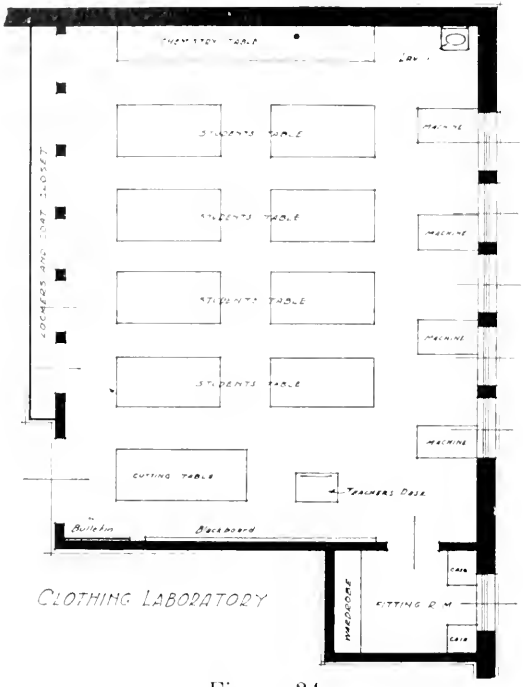


Figure 34.

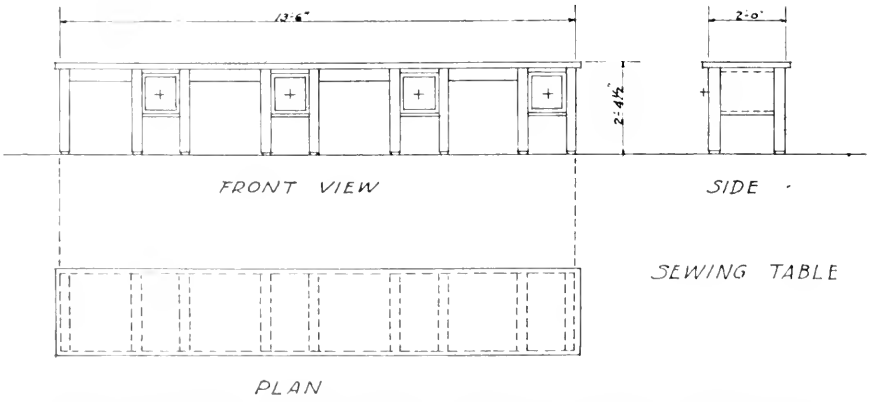


Figure 35. By courtesy of Federal Board for Vocational Education.
(See page 65.)

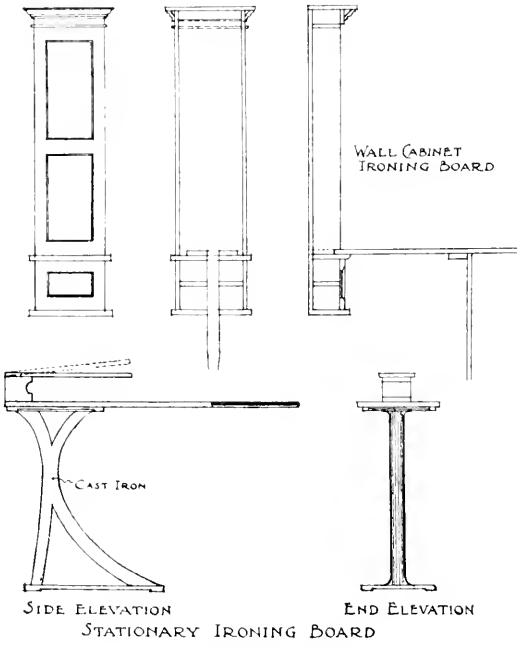
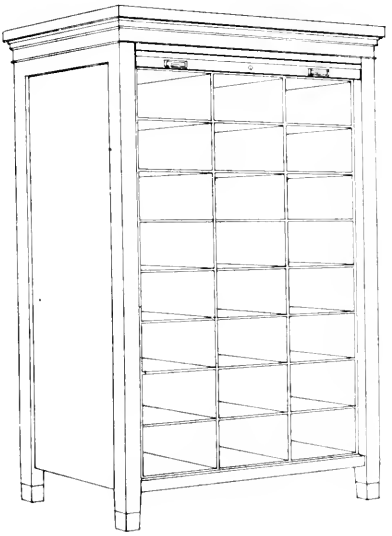
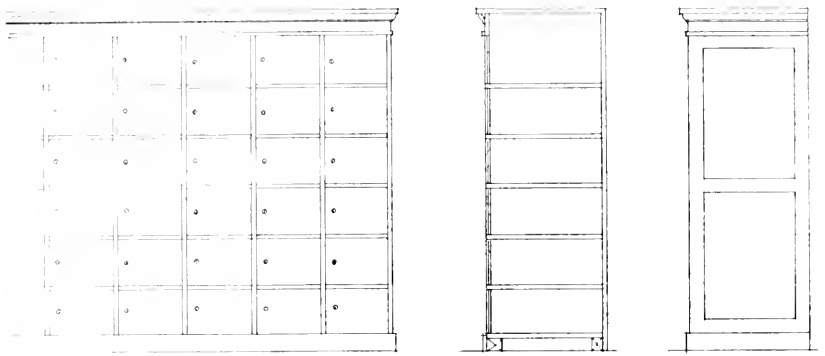


Figure 36.



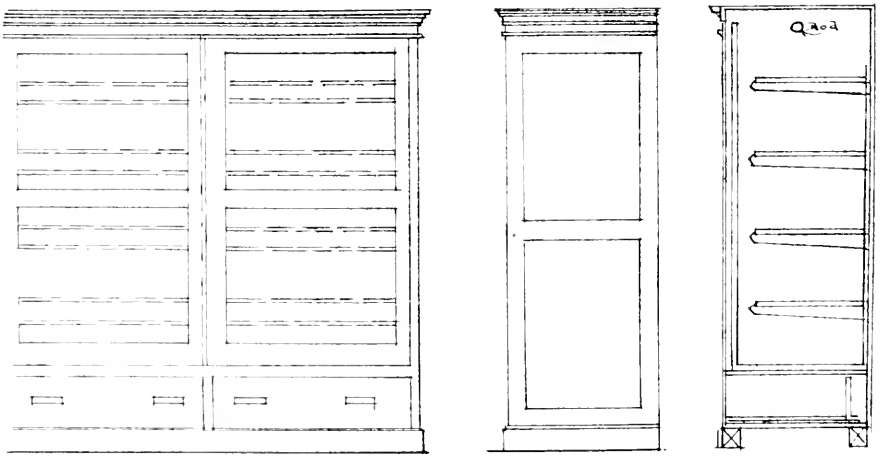
CASE FOR COOKING OR SEWING CLASS

Figure 37.



SEWING LOCKERS

Figure 38.



WARDROBE FOR CLOTHING LABORATORY — STORE ROOM

Note: This case has removable shelves and Rod for coat hangers

Figure 39.

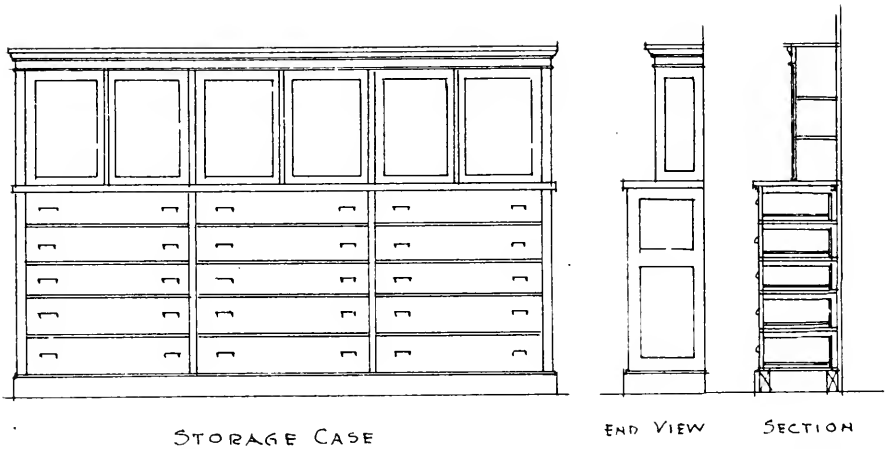


Figure 40. For clothing laboratory or connecting storeroom. Also convenient for supplies for home nursing.

IV. The Home Nursing Laboratory

Child care, home nursing, and household management cannot be taught in any one room. For the teaching of these home making activities, the rooms already described will be used, but in addition it is advisable to have a bedroom and a bathroom. For convenience these rooms have been designated as the home nursing laboratory.

The furnishings should be the same as any sensibly furnished bedroom. A hospital bed may be substituted for ordinary beds, in which case the hospital bed may be used for all purposes. This room is a classroom merely and is not to be occupied in the usual sense that a bedroom is occupied. It should, however, be a service station for the school as a rest and first aid room. In small schools where no other provision is made, it will be of use for medical inspection of the children.

Not only will it be an advantage to the school to have a home nursing laboratory, but it will be an advantage to the home nursing classes to assist with the patients.

It is not absolutely necessary to have a separate laboratory in order to teach home nursing. Portable equipment may be used in the clothing laboratory and stored in a closet when not in use. There is danger that such instruction will be formal and theoretical, not giving enough simple practice in practical nursing procedure.

The following is a list of equipment required for accredited courses in home nursing.

1 bacteriological chart.
1 W. E. foot tub.
1 ice cap.
1 pair bandage scissors.
1 pus basin.
1 8-oz. glass funnel.
1 No. 4 Davol "12" invalid ring.
1 nursing bottle fittings—No. 1185 Waree.
4 No-Neck nursing bottles comp.
1 Bent-Neck nursing bottle, 8 oz., graduated.
1 radiant hot water bottle 2 qt.
1 Davol No. 902 face bottle.
1 white enamel "Ideal" bed pan.
1 No. 515 white china feeding cup.
1 No. 115 white enamel sputum cup.
1 glass eye cup.
1 2-qt. white enamel irrigator pan comp.
1 Ware's medicine dropper.
1 No. 93 Mizpah eye dropper.
1 No. 2011 16 oz. single scale graduate.
1 piece ¼ inch white tubing, 4 ft.
1 tag, 1 min., clinical thermometer.
1 rectal fever clinical thermometer.
1 No. 512 hard rubber syringe.
1 bar and ulcer syringe—Tyrian.
1 Bent medicine tube.
1 gray enamel wash basin.
1 gray enamel soap dish.
1 gray enamel kettle with cover.
1 gray enamel funnel No. 92.
1 gray enamel pitcher—quart.
1 gray enamel pitcher—quart and half.
2 gray enamel pie pans.
1 hand brush.
1 hair brush.
1 hair comb.
1 very soft hair brush.
1 fine comb in set—Laby.
1 Sterno outfit.
1 toothbrush.
1 gray enamel teakettle.
1 wire basket for nursing bottles.
1 No. 1 dairy thermometer.
1 rectal tube.
1 bottle brush

Other Needed Equipment in Home Nursing Strongly Recommended (Not Required).

1 (or 2) Chase hospital baby.
(This may be used in demonstrating the baby bath and other purposes.)
2 hospital beds with mattresses.
4 pieces flannel, each 1 yard square, for hot applications.
4 pieces of old linen, 18 inches square, for cold applications.
1 bucket.
4 bed blocks.
4 wash cloths.
Bed linen for each bed:
- 2 pillow cases.
- 2 sheets.
- 1 linen draw sheet.
- 1 rubber draw sheet.
- 2 pillows.
- 1 mattress and cover.
- 1 bedspread.

Invalid tray and dishes (most of these are available from food laboratory):
- 1 soup bowl.
- 1 large plate.
- 1 small plate.
- 1 cup and saucer.
- 1 glass.
- 1 individual cream and sugar.
- 1 individual salt and pepper.
- Silver and linen.

2 more thermometers (mouth).

DRUGS AND SUPPLIES

Alcohol.
Boric acid solutions.
Lysol solution.
Olive oil or lard.
Witch hazel.
Liquid soap.
Castile soap.
Talcum powder.
Flax seed.
Mustard.
Iodine.
Flour.
Liniments.
Turpentine.
Sterile cord dressing.
Toothpicks for swabs.
Nail file.
Orange wood sticks.
Absorbent cotton.
Oiled muslin.
Bandage.
Forceps.
Bowl.
Needle and thread.
Thimble.

DIRECTIONS FOR MAKING FOOT BOARD TO SUPPORT A PATIENT WHEN SITTING UP IN BED

Get a ¾-inch board about 6 inches wide, the length of the board to equal the width of the bed. Bore a hole in each corner of the ends of the board, carrying a fine rope through this to be tied to the head of the bed. The board should be padded with several thicknesses of cotton and this covered with old linen. It will be adjusted by the ropes and will accommodate the patient as a support for the feet, and prevent slipping down in the bed.

ADDRESSES

American Red Cross, Equitable Building, St. Louis, Mo.

The Chase Hospital doll may be obtained from M. L. Chase, Pawtucket, R. I. This doll may be used in demonstrating the baby bath and other purposes.

Smith and Davis Manufacturing Co., St. Louis, Mo.—Hospital bed.

American Red Cross, Equitable Building, St. Louis, Mo.—Information, equipment, and a booklet illustrating "Elementary Nursing Technique," price 25c.

EQUIPMENT FOR VOCATIONAL HOME MAKING DEPARTMENTS IN HIGH SCHOOLS

The suggestions and requirements given on equipment elsewhere in this bulletin are satisfactory for vocational schools. The preferred floor plan is the bungalow, including provision for home nursing and laundry instruction. The related work required in the vocational program can, for the most part, be taught either in the home making laboratories or in other classrooms and laboratories of the school.

The basement location for home making laboratories is not acceptable for vocational schools. School buildings built after 1922 will not be accepted at all for vocational departments if home making laboratories are in basement rooms. In other schools, if the home making laboratories are in the basement or are otherwise inadequate, the policy will be to encourage the construction of a bungalow for the work.

Since many schools are not adequately equipped for physiology, and since physiology, hygiene and sanitation, as outlined in Bulletin 114, may be offered as a related subject under conditions specified in the State Plan for Vocational Education, the required apparatus and supplies for teaching an accredited course in physiology are quoted here.

APPARATUS AND SUPPLIES USED IN TEACHING PHYSIOLOGY, HYGIENE AND SANITATION

(Especially Related to Home Economics.)

Minimum.

Charts of the Human Body.
  Such as: W. and A. K. Johnson—from A. J. Nystrom & Co., Chicago.
  W. M. Welch & Co., Chicago.
  S. E. Knott.

Models.
  Air passages.
  Heart.
  Lungs.
  Walls of small intestines—Villi.
  Brain.
  Eye.
  Ear.

1 microscope, compound, two objectives, two eye pieces (one 10x).
Abbe condenser.
1 magnifier.
Slides—1 box.
Cover glasses—1 box.
Medicine droppers—1 box.
1 cylindrical graduate, 25 c.c.
Glass tubing (medium), 6 feet.
1 dissecting set.
6 doz. test tubes (6-inch).
Alcohol lamps (one for each two students), or
Bunsen burners, if gas is available.
Test tube—rack—(one for each two students). (Capacity, 6 test tubes).
1 tripod.
1 wire gauze.
Beakers (250 c.c.)—two per student.

Minimum.

6 Erlenmeyer flasks.
Porcelain evaporating dishes—one for each two students.
8 Petri dishes.
2 glass funnels.
1 package filter paper.
Matches.
Osmosis apparatus (thistle tube, parchment paper, rubber bands).
Sneller's test cards (for eye).

REAGENTS AND OTHER PERMANENT SUPPLIES.

Note: One 8-oz. bottle of each liquid reagent will be sufficient.

Iodine solution (K. I. + I.).
Nitric acid—concentrated.
Nitric acid—dilute.
Sulphuric acid—concentrated.
Sulphuric acid—dilute.
Hydrochloric acid—concentrated.
Ammonium hydroxide—concentrated.
Sodium hydroxide—concentrated.
Copper sulphate.
Fehling's solution.
Chloroform.
Sodium oxalate.
Litmus paper (red and blue).
Pepsin—1 ounce.
Pancreatin—1 ounce.
Rennin—1 ounce (Junket tablets).
10 yards cheesecloth.
Agar medium.

FRESH SUPPLIES TO BE PROCURED LOCALLY DURING THE COURSE

Yeast, fresh.
Starch.
Eggs.
Milk.
Tadpoles.
Heart (beef).
Kidney (beef).
Bones.
Gland (pancreas).
Lungs (chicken).
Common foods in 100 calorie portions.
Sugar.
Connective tissue.
Muscle.
Blood.

Additions for Good Standard Equipment (Not Required, But Strongly Recommended).

(See Laboratory Manual of Physiology, by Hartman, World Book Co., pages 135-144).

More models of parts of body.
A compound microscope for each six students.
1 magnifier for each two students.
Test tube clamps (1 for each student).
1 scapula and 2 dissecting needles for each student.
1 set of slides, such as furnished by T. E. Knott & Co.
Physiology set, $12.00; bacteriology set, $7.00.
Harvard trip balance.
Artificial eye (Harvard Appliance Co.).
2 chemical thermometers.
8 oz. ammonium oxalate.
8 oz. ammonium carbonate.
8 oz. ammonium thiocyanate.
8 oz. ammonium molybdate.

ADDRESSES FOR LABORATORY SUPPLIES

Bausch & Lomb Optical Co., Rochester, N. Y.—Microscopes, apparatus, slides and chemicals.

Spencer Lens Co., Buffalo, N. Y.—Microscopes, apparatus, slides, chemicals.

Central Scientific Co., 345 West Michigan Avenue, Chicago—Apparatus and chemicals.

L. E. Knott Apparatus Co., Harcourt Street, Boston, Mass.—Apparatus, slides, models.

Kry. Scheerer Co., 225 Fourth Avenue, New York City.—Apparatus, slides, models.

Standard Scientific Co., 186-192 West Fourth Street, New York City.—Apparatus and chemicals.

NOTE.—The following Texas firms can furnish you with all the reagents, including agar prepared in tubes for plating:

Southern Drug Co., Houston.
Houston Drug Co., Houston.
San Antonio Drug Co., San Antonio.
Texas Drug Co., Dallas.
Crowdus Drug Co., Dallas.
Brenham Drug Co., Waco, or direct from
Digestive Ferments Co., Detroit, Mich.

EXTRACTS FROM BULLETIN BY FEDERAL BOARD FOR VOCATIONAL EDUCATION

Plant and Equipment for Vocational Classes in Home Economics

ACKNOWLEDGMENT

As this bulletin was ready for press, a similar bulletin was received from the Federal Board for Vocational Education. Realizing that it offers much valuable help on equipment we have requested the privilege of publishing excerpts from this bulletin in order that Texas schools may have the benefit of these excellent suggestions.

The following material has been made available through the courtesy of the Federal Board for Vocational Education and Miss Anna E. Richardson, Chief, Home Economics Education Service.

Figures 22, 23, and 35 are from drawings in this same bulletin and are available through the courtesy of the Federal Board for Vocational Education.

HEIGHT OF WORKING SURFACES

The height of working surfaces should be determined by the average height of the pupils. In all cases heights should be arranged so that the position of the worker will insure a straight back and good poise of body in order to save fatigue. The following standard heights are recommended for sinks of 4½ inches depth:

Height of pupil	5′ 2″	5′ 4″	5′ 6″
Height of sink	32″	35″	38″

It will be found necessary to place shallow sinks a little higher.

The working level of table tops should be higher for standing than sitting.

	Height of table for sitting		
Height of pupil	5′ 2″	5′ 4″	5′ 6″
	27″	28½″	31″
	Height of table standing		
	5′ 2″	5′ 4″	5′ 6″
	33″	35″	38″

A kitchen table should be selected for the right standing height and a high stool be provided for sitting.

The heights for ironing boards need to be at least two inches lower than the table. Arrangement can be made to adjust one board to several different heights.

Height of wash tub is reckoned from the top of the tub.

Height of pupil	5′ 2″	5′ 4″	5′ 6″
Height of tub	34″	36″	38″

THE LAUNDRY AND ITS EQUIPMENT

The equipment essential for instruction in laundry work includes tubs (preferably stationary tubs), a wringer, a hand-power washing machine, a power washing machine of the type suited to the power

available in the community, irons, ironing boards and small supplies. If the drain boards of the school kitchen sink are hinged, and a separate space for laundry cannot be provided, stationary tubs may be placed in the kitchen, under the drain boards and connected with the main drain. By such an arrangement the drain boards can easily be raised when the tubs are in use.

A room 8′ 6″x14′ 0″ with one large window is an adequate room for a laundry. The equipment is recommended as follows:

(a) *Tubs.* Three stationary tubs of any material that is smooth, easily cleaned and non-absorbing; the selection is a matter of price. The top of the tub should be placed 36 inches from the floor.

(b) *Laundry Stove.* The kind of stove selected should depend upon the common fuel used in the community. It needs to be large enough to hold a boiler and should be placed low so as to avoid unnecessary lifting. The top of the boiler should be a little above the top of the tubs.

(c) *Ironing Boards.* Ironing boards 56 inches long and 14 inches wide should be placed at different heights, 31 inches, 33 inches, and 36 inches, to accommodate the different sized pupils. They may be hinged so that when not in use they can be hooked up to the wall.

(d) *Table.* Below the ironing boards may be hung a drop leaf table which can be used for sorting and sprinkling clothes. Obviously this can only be used when boards are not in use and must be dropped when ironing is to be done. The top should be fine grained light wood free from resin and unvarnished.

(e) *Drier.* Attached to the ceiling and raised or lowered by a pulley may be a clothes drier which can be purchased ready to hang.

(f) *Storage.* One closet in the laundry room 3′ 4″ long and 1′ 6″ wide may be used to store laundry supplies and also clothing supplies if such space is needed.

SEWING TABLES

In choosing tables for sewing purposes, it is necessary to draw largely on a stock of common sense. An elaborate highly polished table of many drawers may be a thing of beauty, but it does not mean real service. What the person doing "garment construction" needs in a table is working space on which to cut, a comfortable height, a top which will stand hard usage of scissors, pins, etc., drawer storage which is not put in at the sacrifice of knee room, length of table rather than width, and the table so placed that the light falls over the left shoulder. These tables will have to be made.

Tables conforming to the description are as follows:

Tables 13′x6″ long and 2′ 0″ wide which should be built at heights 2′ 3″, 2′ 4½″, and 2′ 6½″, respectively, to provide for the varying heights of the students. Four drawers are placed in each table with 2′ 0″ space between them. The drawers when not in use are kept in the locker compartments found on south side of the room. (See figure 22.) When the same table and seating space are used by two or more

groups of pupils, drawers and locker space sufficient to accommodate each pupil is provided, and in this way the necessity for emptying the sewing drawers at the end of each period in order to provide drawer space for the next group is avoided. The table tops should be of hard, fine grained, unfinished wood. An illustration of these tables is shown in detail drawing, figure No. 35. A cutting table 10′ 0″ long and 3′ 0″ wide may be hung on the one wall of the clothing laboratory under the window built so that it may be dropped down when not in use. This cutting table should be of the same material as the other table tops.

UNIT KITCHENS

The room used for food study and preparation must provide for individual work, for group work, and for group instruction and recitation, as separate periods for laboratory and recitations are not desirable. Two types of equipment designed to provide these facilities are the unit kitchen and the unit desk equipment. In the unit kitchen the floor space is divided by low partitions or by a group arrangement of the equipment into small kitchens or units equipped as average sized family kitchens, in which two to four students work.

If the room to be used for cooking is 30′ 0″ long and 23′ 0″ wide (see figures 22 and 33) it may be divided into four unit kitchens separated by light partitions 5′ 0″ high, a railing, or separated by no partition depending only upon the placement of the equipment to mark the division line.

1. Unit kitchen No. 1 has a stove, a sink and drain board on two sides. Below the drain boards are cabinets with cases, bins and a bread board. For illustration see figure 23A. On north wall is a hinged table. If extra storage is desired this space can be used for supply lockers.

See figures 23A and 33.

2. Unit kitchen No. 2 has a sink with one drain board without cases or shelves below, a stove, and a built-in kitchen cabinet.

See figures 23B and 33.

3. Unit kitchen No. 3 has a built-in cabinet, a stove and a sink with no drain boards and cases below.

See figures 23C and 33.

4. Unit kitchen No. 4 has a stove, a table, a sink and two drain boards with cases above and bins, drawers and cases below, a table and a wood or coal range. (Not shown in drawings.)

ADDRESSES

I. Furniture

Monroe Benbrook & Co., 507 South Dearborn Street, Chicago, make furniture to order to special designs. School laboratories a specialty.

Houston Show Case Co., Houston, Texas, make furniture to order.

The Hub Furniture Co., Fort Worth, Texas, make furniture to order.

Wiese Laboratory Furniture Co., Manitowoc, Wis., furniture ready built and to order. Texas Representative, W. C. Hixson, 1610 Bryan Street, Dallas, Texas.

E. H. Sheldon & Co., Muskegon, Mich., ready built laboratory furniture.

Kewaunee Manufacturing Co., Kewaunee, Wis., ready built laboratory furniture. Texas representatives, Bickley Brothers, 305 Foster Building, 719 Main Street, Houston, Texas.

Leonard Peterson & Co., 1222-34 Fullerton Avenue, Chicago, ready built or made to order furniture (also kitchen utensils).

Mutschler Brothers, Nappanee, Ind., kitchen tables.

Sellers Kitchen Cabinet Co., Elwood, Ind., makers of a kitchen cabinet in white, top of white porcelain enamel, well adapted to food laboratory as students' tables; also a small kitchen cabinet for unit kitchens.

Enamel Products Co., Eddy Road and Taft Avenue, Cleveland, Ohio, white porcelain table tops. These are desirable for schools having tables built to special design.

Sani-Products Co., 209 West Randolph Street, Chicago, manufacturers of white glass tops for tables.

Columbia School Supply Co., Indianapolis, Ind., steel enameled desks.

Vitrolite Company, Parkersburg, W. Va., makers of table tops (white).

II. Kitchen Utensils

R. A. Fife Corporation, 70 Fifth Avenue, New York City, kitchen utensils in standard laboratory sizes and sets. Send for catalogue.

Huey & Philp, Dallas, Texas.

Bering Hardware Co., Houston, Texas.

Bering & Cortez, Houston, Texas.

Newton & Weller, San Antonio, Texas.

Lewis & Congor, Forty-fifth Street and Sixth Avenue, New York City.

Any local hardware dealer can order utensils, etc.

III. Sinks.

Standard Sanitary Manufacturing Co., Pittsburg, Pa. Branch offices, Dallas, Houston, and San Antonio.

IV. Address for Clothing Equipment

Singer Sewing Machine Co., 1305 Main Street, Dallas, Texas.

Liberty Paper Co., 52 Vanderbilt Avenue, New York City, will send all supplies (except stand) necessary for a dress form, with directions for making. Price, $1.00. State bust size.

Mirrors

Pittsburg Plate Glass Co., Houston and Dallas, will furnish mirrors any size for framing.

Bias cutter—any Singer office.

Tucking machine, $9.00—Durbrew & Hearne, New York City.

Velvet pressing board, 2 sizes, $1.00, $7.50—Lightenburg Brothers & Co., New York.

Dress Forms and Stands

Sanger Brothers, Dallas, or Hall-Barchert Dress Form Co., Chicago.
James F. Dunn, 1265-69 Broadway, New York City.

Skirt Gauge

Victor H. Canham, Forrest Avenue, Buffalo, N. Y.

Machine Belt Cutter for adjusting the machine belt, G. B. Smith, 2168 Amsterdam Avenue, New York City.

V. Electric Equipment

Electric Dish Washing Machines

G. S. Blakeslee & Co., Cicero, Ill.
Western Electric dishwasher and kitchen table—any Western Electric agent.

Washing Machines

Home Devices Corporation, 11 East Forty-second Street, New York City.
Vacuum Electric Washer, Syracuse Washing Machine Corporation, Syracuse, N. Y.
Home Electric Power Machine, Dana Manufacturing Co., Cincinnati, Ohio.
Federal Electric Washer, Federal Electric Washer Co., Chicago.
Western Electric Company.
Laun-Dry-Ette Sales Co., 46 West Forty-sixth Street, New York City, combination washer and wringer.

Other Devices

Hot Water Heater—Humphrey Co., Kalamazoo, Mich. (gas).
Coal or Wood Heater.
Gas ranges in standard or small sizes:
Quick Meal—American Stove Co., 825 Chauteau Avenue, St. Louis, Mo.
Vulcan—Wm. M. Crane Co., 16-18-20 West Thirty-second St., New York City.
Oriole—Baltimore Gas Appliance Co., Bayard and Hamburg Co., Baltimore, Md.
Estate—Estate Stove Co., Hamilton, Ohio.
Detroit Jewel—Detroit Stove Works, Detroit, Mich.
Clark Jewel—George M. Clark Co., Division American Stove Co., 179 North Michigan Avenue, Chicago, Ill.
Reliable—American Stove Co., Cleveland, Ohio.
Eclipse—George Roper Corporation, Rockford, Ill.

THE ITEM OF COST IN FOOD STUDY

What to do with the food prepared in food classes has always been a problem for home economics teachers. This problem has grown in intensity as the program has changed from one laboratory period per week to five, and as minute quantities have given way to family sized quantities. Food prices have also increased, making the problem more acute.

The most logical way to solve both the problem of more practical work for the girls through family quantity cookery and of less expense to the school, is for the cookery class to be partially self-supporting by selling some of its products. There are several ways of disposing of the food—teachers' lunch, school lunch room, special sales, selling meals to one person for a party of guests, or to individuals.

Under no circumstances is it advisable for the cookery classes to have entire responsibility for the teachers' lunch or the school lunch. Such an arrangement is an exploitation of the students, is without educational value itself after a period, and consumes so much time that little or no subject matter is covered. The ideal relationship between a cookery class and a lunch room insures a market in the lunch room for all quantity products of the cookery class without entailing on the class any obligation to contract to deliver certain amounts of food each day. The lunch room menus are constructed according to what the cookery classes can furnish.

The legitimate uses of the lunch room by the cookery class are: disposing of the food prepared by the class, training the older girls in management involving menu making, and marketing. The school lunch offers good projects for the dietetics class in menu planning, and in educating the school children to select proper food, besides furnishing a market for the products of the cookery class.

In the small town where there is no lunch room food sales may be held or meals may be sold. The following item is from the *News Bulletin* of Pennsylvania Society for Vocational Education, June, 1921. Many schools in Texas did similar things last year.

"A SELF-SUPPORTING DEPARTMENT OF COOKERY

"The school kitchens in the DuBois High School are equipped on the unit plan. In order to approximate home conditions to a greater extent the girls prepare all foods in quantities sufficient for a family of five and the products are sold. There is never any difficulty in disposing of the food to friends of the girls and the school, many of whom have standing orders for certain dishes, even though no foods are cooked simply because someone would like them. A course of study is followed so that each girl will learn the essential principles and processes and will not be required to repeat processes after she has acquired skill in them merely because the food is in demand. When the lesson consists of the preparation of a meal, that meal is served to paying guests and the girl who prepared it also receives her share. Often one patron will buy the whole meal and entertain her friends. When the lesson consists of type dishes each girl receives a portion large enough for an intelligent judgment of her product. Part of the

products of the canning and preserving lessons are retained for use in the meals.

"All money which is collected is handled by the girls, is deposited in the bank, and is checked out by them to pay for supplies. These are bought at wholesale whenever it is practicable. The girls do most of the buying and calculate the cost of all the products at retail prices. These are sold at cost unless the product has required unusual time and skill to prepare. In such cases a reasonable amount is added for this extra labor. Many citizens are so interested in the department that they often contribute foods such as vegetables, poultry, eggs, and oysters. By means of these contributions and the income from extra labor the department is able to accumulate enough surplus to give a banquet each year to the members of the Board of Education, the Superintendent, and the Principal, and their wives, and to serve refreshments at the annual department exhibit.

"This plan for conducting the work in foods and cookery has a number of advantages. The educational value is great for the following reasons:

"1. Quantities of food and working conditions are similar to those in the home.

"2. There is a chance for the development of initiative and a sense of responsibility, both of which greatly increase the interest in the work. A girl feels more responsibility for a product which is to be consumed by someone else.

"3. The girls learn to market, handle money, and perform the simple operations of banking.

"4. They develop in personal effectiveness through contact with the patrons of their department.

"An additional advantage to the girls is that they are not receiving unnecessary food at inopportune times which is likely to be detrimental to their health. The school also reaps benefits from this plan in the favorable sentiment which is created in the community and the decreased cost to the tax payers."

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Education for the Home—Benjamin H. Andrews—United States Bureau of Education, Bulletin 36, 1914, Part I.

Score Card for City School Buildings—Strayer and Engelhardt—Teachers' College Bulletin, Eleventh Series No. 10.

Score Card for Villages and Rural School Buildings of Four Teachers or Less—Strayer and Engelhardt—Teachers' College Bulletin, Eleventh Series No. 9.

Remodeling the School Kitchen—Goodspeed—Bulletin from State Department of Education, Madison, Wis.

The Strayer, Engelhardt and Hart School Housing Series, Archi-

tect's Forms. Publishers, C. F. Williams & Son, Inc., 36 Beaver Street, Albany, N. Y.

Catalogues of Manufacturers of Furniture, Sinks, Table Tops, etc. See list of addresses.

Misc. 325—Federal Board for Vocational Education, 200 New Jersey Avenue N. W., Washington, D. C. The Plant and Equipment for Vocational Classes in Home Economics.

NOTE.—Little has been written on the subject, therefore much of the material for this bulletin is from observation of home economics equipment and from discussion of such equipment with teachers, merchants, and manufacturers.

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